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VOL. XXI.

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TO READERS AND CORRESPONDENTS.

Communications have been received from Drs. Mettauer, Porter, Denny, Adam, Davis, Sharpless, Andrews, Bennett, Savory, Webber, Currell, and Annan.

The following works have been received:—An experimental Essay on the Relative Physiological and Medicinal Properties of Iodine and its compounds; being the Harveian Prize Dissertation, for 1837. By CHARLES COGSWELL, A. B., M. D., Mem. Roy. Coll. of Surg., &c., &c. Edinburgh, 1837. (From the author.)

A Practical Treatise on the Principal Diseases of the Lungs, considered especially in relation to the particular tissues affected. By G. HUME WEATHERHEAD, M. D., Mem. of the Roy. Coll. of Phys., &c. &c. London, 1837. (From the author.)

Observations on the Preservation of Health, in Infancy, Youth, Manhood, and Age: with the best means of improving the Moral and Physical Condition of Man. By JOHN HARRISON CURTIS, Esq., &c. London, 1837. (From the author.)

Statistics of the Deaf and Dumb in the State of New York, the United States, and in various countries of Europe. By T. ROYEN BECK, M. D. (From the author.)

Transactions of the Medical Society of the State of New York. Vol. III. 1836-7. Albany, 1837. (From the publishers.)

Suggestions with regard to the General Treatment of Fractures, with a new kind of splinting composed of Felt. By DAVID S. C. H. SMITH, M. D. Boston, 1831. (From the author.)

A letter respecting Santa Cruz, as a Winter Residence for Invalids, addressed to Dr. JOHN C. WARREN, of Boston, Mass. By JOSEPH TUCKERMAN. Boston, 1837. (From the author.)

Essai sur la Philosophie Médicale et sur les généralités de la Clinique Médicale. Par J. BOUILLAUD, Prof. de Clinique, Med. de la Faculté de Médecine de Paris. Paris, 1836. (From Dr. Oppenheim.)

Der Wasserkrebs der Kinder. Eine Monographie, von Dr. A. L. Richter. Berlin, 1828. (From Dr. Oppenheim.)

Erster Nachtrag zu den Curbildung, mit bezug auf Cholera. Von Dr. KRÜGER HANSEN. Rostock und Güstrow, 1831. (From Dr. Oppenheim.)

Ueber die Behandlungsweisen der Pseudarthrosen, und eine neue Heilmethode derselben, von Oppenheim. (From the author.)

Rede die zum Vortrage in des Versammlung des Württembergischen ärztlichen Vereins am 30 May, in Ulm bestimmt war von dem homöopathischen Arzte Med. Dr. KARL KAMMERER. (From Dr. Oppenheim.)

Zweite Nachricht über die Wirksamkeit der unter dem Namen Chirurgisch-Medicinische Akademie vereinigten Institute zu Dresden. Von Dr. B. W. SEILER. Dresden, 1831. (From Dr. Oppenheim.)

Beiträge zur Aufklärung der Erscheinungen und Gesetze des organischen Lebens. Von G. R. TREVIRANTS. Ersten Bandes, Drittes Heft. Resultate neuer Untersuchungen über die Theorie des Sehens und über den innern Bau der Netzhaut des Auges. Mit Zwei Steintafeln und vier Kupfertafeln. Herausgegeben nach dem Tode des Verfassers und begleitet mit einer Vorrede vom Geheimen-Rath Tiedemann. Bremen, 1837. (From Dr. Von dem Busch.)

Die Syphilitischen Krankheitsformen und ihre Heilung. Mit Steier Rücksicht auf die Beobachtungen und Erfahrungen der Neuesten Zeit dargestellt Von GEORG FRIED. HANDSCHUCH, M. D. und C., &c. München, 1831. (From Dr. Oppenheim.)

Die Asiatische Cholera in Russland, in den Jahren 1829 und 1830. Nach russischen amtlichen Quellen bearbeitet. Von Dr. J. R. LECHTENSTADT, Prof., &c. Berlin, 1831. (From Dr. Oppenheim.)

Die Indische Cholera. Von Dr. C. F. HARLESS, Prof., &c. Braunschweig, 1831. (From Dr. Oppenheim.)

An Address to the Candidates for the degree of Doctor of Medicine, delivered at the annual commencement of the Medical College of South Carolina, March 15, 1837. By J. B. WHITRIDGE, A. M., M. D., President of the Medical Society, and ex-officio of the Medical College of South Carolina. Charleston, 1837. (From the author.)

The Medical Student, or aids to the Study of Medicine. Including a glossary of the terms of the science, and of the mode of prescribing—bibliographical notices of medical works; the regulations of different medical colleges, the union, &c. &c. Philadelphia, Carey, Lea & Blanchard, 1837. (From the publishers.)

University of the State of New York. College of Physicians and Surgeons' Circular for 1837-8. New York, 1837. (From Dr. Brigham.)

Zeitschrift für die gesammte Medicin, mit besonderer Rücksicht auf Hospital praxis und ausländische Literatur, January, February, March, April, May, 1837. (In exchange.)

Gazette Médicale de Paris, January, February, March, April, May, June, July, 1837. (In exchange.)

Bulletin Général de Thérapeutique, January, February, March, April, May, June, 1837. (In exchange.)

Journal de Pharmacie, June, 1837. (In exchange.)

Journal de Médecine et de Chirurgie Pratiques, January, February, March, April, May, June, July, 1837. (In exchange.)

Journal des Connaissances Médico-Chirurgicales, January, February, March, April, May, June, July, 1837. (In exchange.)

The Medico-Chirurgical Review, for January, April, and July, 1837. (In exchange.)

The Edinburgh Medical and Surgical Journal, for January, April, and July, 1837. (In exchange.)

The Dublin Journal of Medical Science, July, 1837. (In exchange.)

The London Medical Gazette, June, July, 1837. (In exchange.)

The British and Foreign Medical Review, July, 1837. (In exchange.)

The Select Medical Library and Eclectic Journal of Medicine, August, September, October, 1837. (In exchange.)

The Boston Medical and Surgical Journal, August, September, October, 1837. (In exchange.)

The Southern Medical and Surgical Journal, August, 1837. (In exchange.)

Authors of new medical books, desirous of having them reviewed or noticed in this Journal at the earliest opportunity, are invited to transmit to the *Editor* a copy as soon after publication as convenient, when they will receive prompt attention. Under ordinary circumstances, very considerable delay is caused by the circuitous routes through which they are received.

Papers intended for publication should be sent, *free of expense*, as early after the appearance of the Journal as possible, in order to be in time for the ensuing number. Such communications should be addressed to "CAREY, LEA & BLANCHARD, Philadelphia, for the *Editor of the American Journal of the Medical Sciences*." All letters on the *business* of the Journal to be addressed exclusively to the publishers.

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THE
AMERICAN JOURNAL
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ARTICLE I. *Report of four additional cases of Stone in the Bladder, in which the operation of Lithotripsy was successfully performed.*

By J. RANDOLPH, M. D., Lecturer on Surgery, one of the Surgeons to the Pennsylvania Hospital, &c. &c.

Since my last report upon the subject of lithotripsy, made in the Number of this Journal for November, 1836, I have performed this operation in four instances. The two first of these (making my fourteenth and fifteenth cases) occurred in the Pennsylvania Hospital in this city, and the report of them is furnished by my friend, Dr. James A. M'Crea, who was at that period house surgeon to this institution.

The sixteenth case occurred in an old gentleman of this city, seventy-three years of age, who had been for a considerable period under the particular charge of Dr. H. M'Murtrie, and this gentleman has had the kindness to furnish the statement of this case. The seventeenth case is that of a young gentleman, also of this city, who was cured most happily in a very short period, as will be seen by the report.

The following is Dr. M'Crea's account of the two first cases:

"I trust the following cases will prove interesting to the readers of the American Journal, inasmuch as they are the first in which the complaint of stone in the bladder has been cured in the Pennsylvania Hospital by any other than a cutting operation.

"Within the last five years the instruments of M. Civiale and M.
No. XLI.—NOVEMBER, 1837.

Jacobson were employed in the treatment of several cases of calculus (not the most favourable, however,) without success, and great anxiety was felt by all those connected with the institution that the operation should be established upon its records by a favourable result.

"This, I am happy to state, has been accomplished in two cases; the latter, as will appear in its details, was one of the most unfavourable that could have possibly presented, and the successful treatment of which speaks volumes for the inestimable value of the operation, the case being one in which the gorget or scalpel could have offered very little hope of relief, thereby demonstrating the superiority of lithotripsy over any and every other method of treating urinary calculus.

"Before entering upon the first case it may be well to mention, as indicative of the strong feeling in favour of the operation among the people of our country, that Mr. Askine came to the city predetermined to submit to no other operation before he had tested this, and confident that he would shortly return to his family perfectly restored.

"CASE XIV.—Mr. Askine, aged 32 years, cabinet-maker by trade; of robust frame; cheerful disposition; good general health; admitted into the Hospital on the 26th of October, 1836. He had travelled from Pittsburg, where he has resided for the last 13 years, chiefly by water, with great comfort, very little exacerbation of symptoms being produced by the journey.

"The complaint had manifested itself about six months ago, (May last,) by the symptoms usually characterizing its early stages, and continued to advance without much distress for three months. Since that time he has been unable to retain his urine for a longer period than one to two hours, and towards the close of the day, after moderate exercise, this period was much shortened. He has suffered several times from acute inflammation of the bladder, which was subdued by rest, leeches, and other antiphlogistic treatment. He had also several attacks of irritation and inflammation about the sphincter ani, productive of great pain and inconvenience. With the exception of these occasions, he has superintended his business since his attack. The character of the urine has been turbid, occasionally a great deal of mucus and sediment accompanying its discharge; quantity very variable.

"Oct. 27th. Has had a restless night, passing his urine very frequently—hourly, almost; with a disposition to chilliness, to which it may be stated he has been unusually subject ever since the commencement of his disease. Pulse 92 per minute, with slight thirst and heat of skin. R. mixt. neut. $\overline{3}$ ss. occasionally; tepid fomentations to perinæum.

"Oct. 28th. Dr. Randolph sounded the patient in my presence. The stone was readily detected at the neck of the bladder, and communicates to the instrument the feel of a soft calculus. After sounding, a little sand passed, and the patient had a well marked chill. The chill recurred upon the evening of the succeeding day, after which he was very comfortable until the day of the operation.

"On the 2nd of November, Dr. Randolph, in the presence of his colleagues, a very large assemblage of physicians, students of medicine, and gentlemen, who had been attracted by the novelty and extreme interest of the case, introduced the *brise-pierre articulé* of M. Jacobson into his bladder, seized and crushed the stone three several times. During the movements of the operator the patient did not exhibit any evidence of pain, and in reply to an inquiry relative to his sufferings, answered that he felt no inconvenience or unpleasant sensation. He walked from the operating theatre to an adjoining chamber, and about an hour afterwards made use of a warm bath. He expressed great relief from distress and pain, had no chill or fever, and passed his water but once during the night. On the following morning a large quantity of sand and a fragment of some size passed out, and during the day three or four distinct fragments of considerable size passed through the urethra, without pain or inconvenience. The patient, in fact, was unconscious of their passage.

"Nov. 5th. Some difficulty of passing urine arose from a collection of mucus and sand at the neck of the bladder, giving rise to some degree of pain. A chill followed the passage of the agglutinated mass.

"Since that time he has had no pain or other unpleasant symptom. Appetite excellent; takes exercise in the open air, and is fast regaining strength.

"Nov. 10th. Dr. Randolph sounded the patient with the instrument of M. Jacobson, and detected a small fragment, which he immediately broke, and it passed out in the afternoon. Dr. R. expressed the opinion that it would have passed out in a day or two without assistance.

"Discharged, November 16th, 1836, perfectly cured of every symptom of stone.

"Upon the third day after the first operation a small piece of wax, about the size of an ordinary buck-shot, passed from the bladder, being evidently the nucleus of the stone, as the larger fragments of the stone which had been passed corresponded to and closely fitted upon its surfaces. The patient could in no manner account for this singular occurrence, having never had any other instrument introduced into his urethra than a metallic sound.

"I believe no case has ever been recorded in which this usually protracted and painful disease was relieved so fully and unequivocally in a shorter time, but fourteen days having elapsed from the performance of the first operation to the discharge of this patient. Letters from him of a recent date entirely confirm his complete restoration to health and usefulness.

"CASE XV.—The subject of this case is a member of the medical profession, from a sister state; and the existence of disease of the bladder being of long standing, the account of the patient, Dr. Silas Tompkins, of New Bedford, Massachusetts, has been prefixed to the history of the operation, as detailed by himself upon entering the hospital.

"In July of 1832, (he says,) I suffered from an attack of paraplegia, commencing with a sensation of numbness in the left heel, and a partial loss of power over the bladder, so that I was obliged to make an effort of from half a minute to a minute before I could command its action. This state did not continue long without an increase of unfavourable symptoms; the sensation of numbness extended up to the knee, and in the course of two or three weeks my gait became clumsy and staggering. I soon lost the power of retaining or expelling my fæces, and was obliged to have constant recourse to the catheter to evacuate the bladder.

"I continued to walk, or rather hobble about, until September, when I lost all power of motion, and nearly all sensation below the sternum. About the 1st of November a fistula in ano was formed, which discharged copiously and reduced me very much, so that I kept my bed for eight months.

"In June, 1833, I so far regained my health as to retain urine for six or eight hours, and had a moderate command of the rectum.

"In the summer and autumn of 1834, however, it became necessary to introduce a catheter four or five times in the course of a single night, and it was about this time that blood was first observed to follow a discharge of urine, particularly after exercise in a carriage.

"The first attack of acute cystitis occurred in June, 1835. Great pain in the region of the bladder, along the course of the urethra; strangury, hemorrhage, &c., accompanied by a good deal of sympathetic fever, since which my bladder has never been free from disease, very irritable, sometimes but 20 or 30 minutes elapsing without an involuntary discharge; urine constantly morbid, containing large quantities of mucus, occasionally mixed with blood. Since this period the catheter has been constantly employed; and although but little retentive power remains, there is a slight expulsive power left.

"In the autumn of 1836 I was satisfied, after repeated attempts to detect the presence of stone with a sound, of the existence of a calculus of some size in my bladder, and immediately resolved to submit to lithotripsy; and accordingly wrote to Dr. Randolph in relation to my case, who advised my visiting Philadelphia and entering the Pennsylvania Hospital."

"Such was the brief history given by this gentleman on the 15th of December, 1836, when he first came under my notice as a patient in this institution.

"Doctor Tompkins was sounded by Dr. Randolph on the 15th, and the stone readily found; it appeared to be very large, apparently nearly filling up the bladder. The bladder itself appeared very much thickened and irregular, diminished in size, and communicating to the sound a cellular arrangement, as if bands had been thrown across it, or subdivisions of its cavity had taken place. Upon being irritated it contracted spasmodically, with so much force that it was impossible to turn an instrument in it.

"The patient, it will be remembered, at this time had very little control over the passage of the urine; it generally passed involuntarily, notwithstanding which, however, it was discharged with considerable force, and from this circumstance Dr. R. was induced to hope that the fragments of stone would be passed without much difficulty.

"On the 21st of December, Dr. Randolph commenced the operation in the presence of a large assembly of professional and other gentlemen, by introducing the *brise-pierre* into the bladder, and without much difficulty caught and broke the stone twice. After this he was unable to seize the stone, owing, in a great measure, to the violent contraction of the bladder, rendering it almost impossible to expand the blades of the instrument. The patient bore the operation remarkably well, probably owing to the sensibility of the bladder being somewhat diminished. A few hours after the operation he had a chill, followed by fever, which passed off during the night by perspiration. The several succeeding days, calculous matter, about the same in quantity as usually follows the first operation under similar circumstances, was discharged with the urine. The stone was soft and evidently a phosphate of lime.

"On the 23th of December the operation was repeated with success, the stone twice broken, and subsequently a great deal of calculous matter with fragments of considerable size have been voided. No chill or other unpleasant symptom followed this operation.

"*January 2nd.* The operation was again performed, and upon this occasion a different form of the *brise-pierre* used. The stone was

readily caught and very satisfactorily crushed twice. No disagreeable effects supervened after this, the third operation upon the stone.

“January 11th. The stone was on this day twice caught and broken, and large fragments passed off for several days subsequently.

“January 16th. The instrument was introduced to-day and the same successful results followed. The stone is evidently much reduced in size. Large quantities of sand and smaller fragments were passed immediately after the operation.

“January 25th. The instrument having been introduced, four or five distinct fragments of calculus of some size, were caught and thoroughly crushed, a large quantity of calculous matter was extracted between the blades of the instrument, and the patient passed a much larger quantity of stone after this than after either of the former operations; some hemorrhage took place afterwards, but it soon ceased.

“February 12th. Upon sounding the patient this morning, two or three fragments were discovered at the neck of the bladder, which seemed to lie in cells, or dilated pouches; one of them indeed, a day or two previous, had passed into the urethra an inch or more in advance of the membranous portion, and gave rise to some irritation and a chill. An effort was made to extract it, but it was found to be so large in size, as to create apprehension lest an attempt to remove it would excite too much irritation, and it was therefore returned to the bladder. Two large fragments were then crushed without the slightest pain or inconvenience to the patient, and a large quantity of fine sand with six or seven fragments of large size passed during the following forty-eight hours.

“The operation was continued on the 23d and 27th of February, with similar favourable results.

“On the 9th of March, Dr. Randolph sounded the patient and could find but one small fragment remaining, which he was of opinion would have readily passed had not a little swelling taken place at the mouth of the urethra, thereby somewhat contracting its calibre. This fragment was therefore broken, and it passed off immediately after the operation. Although this operation did not occupy more than a minute, it occasioned a great deal of pain and some hemorrhage. The patient remarked after the operation, that his urethra had been unusually tender previous to the introduction of the instrument.

“A few days subsequent to this operation, a fragment of calculus made its appearance in the urethra, and Dr. Tompkins being very anxious to get rid of it, very imprudently passed a sound curved at its point, behind it, and in his efforts to draw it forward, pushed it through the urethra into the substance of the corpus cavernosum. In

this situation it gave rise to a great deal of swelling and irritation; finally exciting inflammation and suppuration, and requiring to be extracted externally, through an opening made into the abscess by a lancet. A swelling of the testicles, it should also be stated, took place, followed by inflammation and suppuration of the cellular texture of the scrotum. For the relief of this, free incisions were made into the scrotum, through which a large quantity of matter was discharged, the swelling gradually subsided and the Doctor entirely recovered from all these occurrences previous to his leaving the Hospital, which he did about the first of May, perfectly free from every symptom of stone, and able to retain his urine four or five hours without inconvenience. Dr. Tompkins returned home and published an account of his case in the Boston Medical and Surgical Journal, in which he states the fragments "were expelled very readily, till by imprudently attempting to extract some large pieces, I wounded the urethra, producing stricture for a time, which prevented any large fragments from passing out; otherwise I should have been cured much sooner."

CASE XVI.—*Reported by H. M'URTREE, M. D.* "The first time I was summoned by Mr. Wm. Y. Birch to see him professionally was in 1829. It was at night; his complaint diarrhœa, which yielded in a day or two to the usual remedies. In five or six weeks similar symptoms occurred, and he continued in this way till 1831, complaining of nothing but the singular and apparently periodical loose state of his bowels. About this time the intervals became shorter, so that not a week elapsed but he had an attack; and in the course of a few months scarcely a night passed that he was not compelled to rise five or six times in the course of the night. In this way did the disease continue to harass and debilitate him, with occasional but short intervals of relief, until his death, in spite of the various plans of treatment successively adopted by myself and others. In 1831 he began to exhibit symptoms of dysuria, trifling at first, but soon increasing in frequency. Here, as in the diarrhœa, all attempts to effect a cure were in vain: and, by the commencement of 1832, I had made up my mind that these new symptoms originated from the combined effects of a relaxed state of the sphincter of the bladder and an enlargement of the middle lobe of the prostate. It was about this time that, on his return from a ride into the country with a friend in his carriage, he passed a quantity of bloody urine, which alarmed him excessively, and induced me to suspect there might be a stone in his bladder. Still there was *no pain*. I closely and repeatedly questioned him on this point; all that he complained of was a *sensation*, as he described it, in the glans penis. An eminent surgeon of this city was now applied to, who

sounded him with great care twice, at an interval of several days. *No stone could be found.* Convinced by this that my former opinion was correct, and taking into consideration the age of the patient, at that period 68, I confined my views of treatment to a palliative course, prescribing for symptoms as they arose, and endeavouring to keep up his general health.

"In this state matters continued with but little variation till April, 1836, when he had a chill, followed by high fever, and which for several days threatened to terminate fatally.

"In the beginning of April, 1837, at his request, I had a consultation with Dr. Randolph on his case, at which it was agreed that he should be sounded again by that gentleman. This was done on the 13th, and to my great surprise the instrument struck directly against a calculus, which, from the ring it sent forth, was judged to be a hard one and of tolerable size. The operation of lithotripsy was of course determined on, and accordingly, on the

"17th April, Dr. Randolph, in presence of Dr. Kirkbride, myself, and a pupil of the operator, introduced the *brise-pierre articulé* of M. Jacobson without the slightest difficulty, (the bladder of the patient being not very irritable and his urethra large,) seized the stone, and broke it four times. The patient complained but very little, and certainly experienced but very little pain. No constitutional disturbance ensued; fragments of the stone, of a red colour, apparently formed of uric acid, came away during the next three days, without any pain, and, in fact, without the knowledge of the patient.

"24th. Dr. Randolph repeated the operation in my presence, and with similar success; caught the stone and crushed it four times. No constitutional disturbance ensued; and the patient, on rising from his bed, observed *with a laugh*, "it was all very fine, but he would be very glad to get rid of us." He suffered *no pain at all* from this operation. Calculous matter, as before, came away during the next three days.

"29th. The operation continued by Dr. Randolph in my presence; the instrument caught the stone without difficulty and crushed it. On this occasion the bladder was much more irritable than at any preceding period, contracting firmly on the *brise-pierre*, so that the stone was crushed but twice. Several large fragments of the calculus, accompanied by smaller ones, came away in a few hours. In the afternoon the patient had a chill, followed by fever. Ten grains of Dover's powder produced a free perspiration in the course of an hour; the fever left him, and he passed on the whole a comfortable night.

"May 7th. The *brise-pierre* again introduced by Dr. Randolph in

my presence. The stone caught and crushed with the greatest facility; fragments passed for the next two or three days.

“May 14th. Operation repeated by Dr. Randolph, very successfully; the stone caught and crushed four times in two or three minutes. No apparent suffering on the part of the patient. Fragments pass as usual. The outer portions or surface of the stone *as smooth as if glazed*.

“May 21st. Operation continued successfully; stone caught at once and crushed four times. No pain complained of by the patient. Fragments pass away as usual.

“May 25th. About midnight Mr. Birch was seized with a spasmodic affection of the throat, accompanied with considerable difficulty of breathing and total inability to expectorate. By daylight the remedies I exhibited partially relieved him, and he expectorated freely. He however complained of great weakness, and observed he must have had “an attack of *grippe*.” There being no fever or uneasiness in the bladder mild tonics and nourishing diet, frequently repeated, were prescribed. The debility, however, increasing, Dr. Jackson was called, in consultation with Dr. Randolph and myself. A minute and careful examination of the case by Dr. Jackson eventuated in his coinciding with Dr. R. and myself in the opinion, that Mr. Birch’s condition was not in the least dependent upon the operation of lithotripsy that had been performed upon him; Mr. Birch himself repeatedly declaring that he had no uneasiness or pain in the bladder, and that he felt satisfied he should soon be rid of the stone altogether. From this moment, in spite of the united efforts of his physicians, he gradually sunk; the power of deglutition became impaired, and on the 2nd of June, 1837, at 7 o’clock in the morning, he expired without a struggle—the only one of his family, so far as he can recollect, that had ever attained an equal age with himself, 73 years; his father, as I have often heard him say, dying of *old age*, many years his junior.”

I subjoin to this statement a letter which I received from my friend Dr. Samuel Jackson, in relation to this case; and also an account of the autopsy, drawn up by my friend Dr. J. Pancoast.

My dear Doctor:—It may be satisfactory to you to have from me a statement of the last illness of your patient, Mr. Wm. Y. Birch, whom you relieved of a urinary calculus by the operation of lithotripsy.

On the 26th of May Dr. M. Murtrie requested me to visit Mr. Birch, in consultation with you and himself. The Doctor mentioned that Mr. Birch had been attacked suddenly in the night with cough and difficulty of breathing, and that my attendance was desired in consequence of the appearance of this new train of symptoms.

At my visit the patient was found very much depressed in his spirits. He expressed himself despondingly, and was impressed with a belief he should not recover. His pulse was feeble; he complained of a sore throat, had great difficulty in swallowing, had a harassing cough, with a viscid, tough expectoration. He had no difficulty with the urinary apparatus; the urine was retained for hours without pain or uneasiness, and voided with the greatest ease. It was evident he was labouring under an attack of acute catarrh or influenza.

It is not necessary to detail the course of the symptoms. It will be sufficient to state that until the close, which took place on the night of June 1st, they varied only in degree. They were confined exclusively to the respiratory, digestive, and circulatory apparatus. No complaint was made or difficulty occurred in the performance of the function of urination.

I may add further, that Mr. B.'s constitution had been enfeebled by a chronic diarrhoea of some years standing. He consulted me respecting it about four years since. With respect, yours truly,

Philadelphia, Aug. 17, 1837.

SAMUEL JACKSON.

Dear Sir:—I transmit you an account of the autopsy of Mr. Birch, which, from the hurry of the occasion, I was not able to carry farther than into the condition of the pelvic and abdominal viscera. The subject was very obese, and presented, on opening the abdomen, a small ommental umbilical hernia, which was not strangulated or inflamed.

The stomach healthy, with some little redness of the mucous membrane. Liver, pancreas, spleen, and small intestines, generally healthy. The colon presented a considerable hypertrophy of all its coats except the outer. A great number of small sacs or pouches were found throughout its whole extent, but most abundantly on the side of the mesocolon; 65 of these could be counted on a foot of intestine taken from the middle of the transverse portion of the colon, and 43 on an equal extent taken from the sigmoid flexure, the smallest of which received the end of the handle of the scalpel, and the largest the end of the forefinger. The pouches were of various lengths, from a few lines to near an inch, and about one-fourth narrower at their orifice in the intestine than at their free extremity. They appeared to be enlarged follicles, which in their developement had made a sort of hernial protrusion between the circular muscular fibres. These fibres could be traced around the margins of the orifices, and gave to the touch the sensation of a ring. The mucous membrane of many of the larger pouches was much thickened, softened, and of a very dark slate colour. The colon contained a moderate quantity of rather

solid fæces; plugs of which, of still greater density, were found sticking into almost all of the pouches above described. These completely filled the pouches, and projected obliquely upwards, from a half to three-quarters of an inch into the cavity of the intestine. The largest of these plugs, when drawn out, resembled in shape and size the first phalanx of the thumb, the rounded end buried in the pouches, and of the same dark hue as its mucous membrane. These pouches were largest and most numerous, and the plugs the most solid, in the transverse and sigmoid portions of the colon. In each of these portions, for the extent of $2\frac{1}{2}$ or 3 inches, the mucous membrane was perfectly dry, of a polished appearance, and much injected. The membrane elsewhere was healthy, except near the cœcum, where it was softened and slate coloured in patches. The rectum was healthy. The bladder contained a few ounces of slightly turbid urine, and was hypertrophied in all its coats to nearly twice their natural thickness.

The mucous membrane presented no other change, except at the lower half of the bladder, where it was of a dark slate colour, though of firm consistence, with a spot the size of a quarter dollar in the centre of the *bas fond*, where it was slightly red and injected—appearances apparently produced by four or five small fragments of stone which rested upon it. The slate colour terminated by an abrupt line at the base of the prostate gland. The bladder exhibited no evidence of recent injury, and none but the usual appearances resulting from the chronic irritation produced by stone. The middle lobe of the prostate was of its natural size; the two lateral lobes enlarged to $2\frac{1}{2}$ times their natural dimensions. Urethra healthy. Both kidneys somewhat hyperemic and soft; the capsular coat stripped off much more readily than usual, as though the organs had been macerated. On the back part of each kidney, below the capsular coat, was found, half imbedded in the substance of the organs, a transparent cyst of serum or hydatid, holding about two ounces. The two cysts were exactly similar in appearance and position. In the right kidney were three others, of the size of marbles. The mucous membranes of the pelvis and ureter of each kidney seemed healthy. Yours, very sincerely,

Philadelphia, June 6, 1837.

J. PANCOAST.

CASE XVII.—*May 7, 1837*, I commenced the operation of lithotripsy on Mr. R. H., of Philadelphia, merchant, aged 27 years. Mr. H. had been afflicted with the complaint for about six months. For several years previous he had been in the habit of occasionally passing calculous matter along with his urine. During this period he was attacked with a stricture in his urethra, and to this cause in all proba-

bility may be attributed the lodgment of the stone in the bladder. Having dilated the urethra to its ordinary size, on the date mentioned, I introduced the *brise-pierre* into his bladder, in the presence of my brother, Dr. Charles Randolph, and caught the stone immediately and crushed it, without the slightest difficulty. Upon withdrawing the instrument, I ascertained that the stone was of a whitish colour and quite soft, having the appearance of a magnesian phosphate. The patient suffered so little pain from this operation, that I had caught the calculus and crushed it before he was aware that the instrument was introduced into his bladder. Soon after the operation he voided a considerable quantity of calculous matter.

May 14th. I repeated the operation, caught the stone four times and crushed it without any difficulty. This operation did not cause the least constitutional disturbance; soon after its performance he discharged the usual quantity of calculous matter. A few days subsequently to this operation, Mr. H. informed me that he could void his urine without any pain or difficulty; he was also able to retain it for several hours longer than he could do previous to the operation. I now examined the bladder with the greatest care on several different occasions, but could not detect any calculus remaining in it.

This patient, it will be perceived, was cured in the space of one week by two operations with the *brise-pierre*, without suffering the least inconvenience or constitutional irritation.

Before concluding this paper it may not be amiss to notice the accident met with by Mr. Roux, recorded in the last number of this Journal, p. 515. This surgeon, in attempting to extract a large fragment of calculus through the urethra by means of the *brise-pierre*, (it is not mentioned whose *brise-pierre*,) the instrument became so fixed in the urethra that it could not be moved either backwards or forwards, and it became necessary to make an incision into the urethra and extract the fragment through this opening before the instrument could be withdrawn. This accident cannot be at all urged as an objection to lithotripsy, inasmuch as the attempt to extract the fragment in this manner was entirely gratuitous on the part of Mr. Roux. We are free to confess that we have often felt tempted to extract fragments of a certain size by means of the instrument, under similar circumstances, with the view of expediting the cure. Such attempts, however, cannot be too strongly reprehended; not only on account of the danger which is thereby incurred, but inasmuch also as a portion of the stone so circumstanced may be crushed by merely closing the instrument, after which the fragments will readily be discharged.

Philadelphia, August 25, 1837.

ART. II. *Report of Cases of Lithotripsy.* By N. R. SMITH, late Professor of Surgery in the University of Maryland.

CASE I.—Charles Elliott, a lad seven years of age, was brought to town by his parents, August 10, 1835, for the purpose of consulting me in regard to stone, under which he was supposed to labour.

On sounding, the calculus was instantly struck, and, as far as I could determine by taking its dimensions with the sound, and with the finger per anum, it was of the size of an ordinary hickory-nut. He had laboured under symptoms of disorder in the urinary passages from birth, but I could not determine from the history of the case at what period the calculus had traversed the ureter and entered the bladder. The child had a sickly aspect, and, besides the severe paroxysms of stone under which he frequently laboured, and the ordinary constitutional irritation consequent thereupon, he occasionally suffered from severe gastric and intestinal irritation.

He could not endure, without much suffering, the motion of a carriage; and in walking he always moved with the cautious and gentle pace so common to those who suffer from stone in an irritable bladder. The urine evacuated was often surcharged with mucus. Sounding for the stone created more sensation than common.

Having provided myself with the admirable apparatus of Jacobson, (*brise-pierre*, or *lithotripteur*,) I resolved to attempt the comminution of this calculus after the method of that surgeon. Accordingly, having premised treatment designed to improve his general condition and to allay the irritability of the bladder, I introduced the lithotripteur first on the 15th of August. The instrument was of a size corresponding to the age of the patient, and had the diameter nearly of a line and a half. It entered with perfect facility, although I had made no preparatory dilatation of the urethra with bougies.* The urine had been directed to be retained as long as possible before the operation, but on the introduction of the instrument some portion of it escaped between it and the urethra.

* The urethræ of patients labouring under calculus are almost always found preternaturally large, especially in children, and to admit with ease instruments of large size. This is probably owing to the efforts which they often make to resist the escape of urine and avoid the pain consequent upon it, by strongly grasping the penis. The urine urged forward into the urethra by the convulsive throes of the bladder, has the effect of forced injections in strongly distending it. Patients, as is stated by Amussat, sometimes partially relieve themselves of stricture by practising a similar expedient—resisting the escape of urine from the orifice till the canal is strongly distended.

After a moment's delay, to allow the spasm of the bladder to cease, I expanded the instrument, (this causing some pain and provoking renewed action in the bladder,) and endeavoured to include the calculus. This I repeated, in a cautious and gentle manner, several times, each time varying the attitude of the instrument as the touch suggested. I failed, however, to grapple with the calculus; and fearful of creating serious irritation of the bladder, I withdrew the *lithotripleur*, and deferred my efforts to another occasion.

On the 18th, the bladder not having suffered from the previous attempt, I renewed my endeavours with the same ill success. Believing that there is but little danger of seriously injuring the bladder by seizing its folds with Jacobson's instrument, I resolved on the next occasion to operate on the *empty* organ; and accordingly, on the 25th, when I next saw him, I drew off the urine as a preliminary step. I then introduced the *lithotripleur*, and after, as before, suffering it to rest for a moment in the bladder, I gently expanded it. I now again desisted from my efforts till the bladder should cease spasmodically to grasp the instrument. After the lapse of a minute, I gently moved the instrument from side to side, in order to facilitate the entrance of the calculus within the loop. Feeling the calculus distinctly, I gently closed the instrument, and had the satisfaction of perceiving the resistance of the calculus, and being assured that I had seized it in a most favourable manner. From the degree in which the instrument was expanded, I learned that the stone was about three-fourths of an inch in diameter. Bringing the levers of the *brise-pierre* into action, the fracture of the calculus was distinctly heard as it yielded at intervals to the power applied. The fragments being expelled from the instrument by its closure, I again expanded it, and with equal ease seized one or more fragments and crushed them. This I repeated two or three times, but as the bladder was very sensitive, I deemed it imprudent to persist at that time in my attempts; I therefore closed the instrument and withdrew it. In being withdrawn there occurred some resistance to the passage of the instrument, and it appeared to scrape the urethra as if rough. This I ascribed to the inclusion of some portions of the calculus within the links of the instrument, rendering it larger than when introduced, although closed as forcibly as was prudent. This was confirmed by the appearance of the instrument on its being withdrawn, for it was clogged with the moist debris of the calculus, the particles of which presented a rough surface, projecting a little from the interstices of the instrument on both sides. These particles scratched the urethra, and caused a few drops of blood to follow the withdrawal of the instrument. They

were so strongly adherent to the jaws of the instrument that they required to be scraped away with a knife; and the instrument, I am satisfied, could not well have been disengaged from them by opening and shutting it in the urine of the bladder, as I endeavoured to do.

It is not easy to determine what was the amount of pain caused by the use of the instrument on this occasion, since we cannot expect an operation of this kind to be endured by a child of seven years without much complaint. The sight of the instruments alone, and the dread of the operation, would necessarily have caused screams and struggles. Of this I am confident, however, that no violence was done to the parts, and that very little more pain could have been occasioned than ordinarily results from the process of sounding for stone.

On visiting my patient the next day, I found that a considerable portion of the pulverulent debris of the calculus had been discharged with the urine, and that there had also been discharged several fragments, of a line or more in diameter; so angular and large, indeed, as to linger a little in their passage, and to cause some degree of irritation. Very little constitutional disturbance had arisen, and the tenderness of the bladder was not greater than it had often before been; though it was such as to render the patient unwilling to use much motion. I found it necessary to prescribe a gentle aperient, fomentations to the belly and mucilaginous ptisans.

I did not repeat the operation till the end of four days, when I again drew off the water as a preliminary step, and employed the lithotripteur precisely as before, and with equal ease and success. I seized in succession several considerable fragments, and effected their comminution without difficulty. I was aided on this occasion by my pupils, and by my friend Dr. Cockey. There was about the same degree of suffering as on the former occasion, and no more disorder of the general health from the operation. Fragments of larger size, however, traversed the urethra; and two or three of these, on the first day after the operation, lodged in the navicular fossa, near the orifice of the urethra, and caused partial retention of urine, with much suffering. These I dislodged with the common dressing forceps without much difficulty, but I think the pain occasioned by their removal was as great as that caused by the use of the *lithotripteur*.

On the third or fourth day from this, aided by Dr. Cockey and the pupils of the Infirmary, I again repeated the operation in precisely the same mode as before, and with very similar results, except that no fragments lodged in the urethra, and he was able to exercise a little. I continued thus to repeat till I had used the instrument with effect seven times, and brought away, as I supposed, more than half

of the calculus. At the end of this time my patient began to suffer much from that form of gastro-intestinal irritation so common in our cities among children during this season of the year, and I was forced to abandon the continuance of my efforts for several weeks, entertaining the hope at the time, however, that I had sufficiently comminuted the fragments to facilitate the escape of the whole.

After some improvement of the general health of the lad, by the employment of suitable means, I again introduced the *brise-pierre*, October 20th, and having caught fragments of the calculus, with facility effected their fracture. After this attempt several fragments traversed the urethra and lodged in the fossa navicularis, causing an almost complete suppression of urine and severe suffering to the patient. I had no small difficulty in effecting their removal, sometimes procuring their dislodgment with the bent probe, but most generally succeeding best with small urethra forceps.

I now continued to repeat the operation, at intervals of four or five days, until I had introduced the instrument in all fourteen times. I was assisted on one occasion by my distinguished friend, Professor Geddings, and by Dr. Wells, of South Carolina. On another occasion, by Professor Warner, of the University of Virginia. This being the first case of lithotripsy which had been attempted in Baltimore, many other of my medical friends witnessed, at different times, the successive repetitions of the operation.

At length the symptoms indicating the presence of foreign matter in the bladder ceased, and on carefully exploring the organ, both empty and full, I satisfied myself that nothing remained. I caused the patient to remain, however, several weeks in the city, but no unpleasant symptoms recurring, I then dismissed him. I have repeatedly heard from him up to within a few weeks of the present time, and learn that he remains perfectly well.

I should remark that in this case, although the use of the instrument was certainly not unattended with pain or terror to the patient, yet there was at no time such mechanical injury inflicted upon the bladder as to give rise to any serious degree of inflammation, or even the patient to be for one day confined to his bed. Several times he was called out of school for the purpose of being subjected to the operation, and more than once returned to his task without complaint. It is true a few drops of blood sometimes followed the instrument, and there occasionally resulted some degree of ardor urinæ.

CASE II.—October 20th, 1835, my friend Dr. Kinnemon, an intelligent young physician of Old Town, took me to see the infant child of a poor woman living in his neighbourhood, aged two years and

eight months, supposed to be affected with stone. The child had laboured under the ordinary symptoms from birth, but, within a few weeks past, they had been very urgent; the severe local irritation not only creating much suffering, but giving rise occasionally to much constitutional disturbance. I immediately explored the bladder with a small sound, and at once struck the calculus, which I ascertained to be small. There was not much evidence of morbid change in the mucous coat of the bladder; the urine was generally clear, though occasionally charged with sabulous particles, and there was not much mucus evacuated. I immediately pronounced the case favourable for lithotripsy, and an early day was fixed for the operation. In the meantime the bowels were kept soluble, and the child was confined to a simple diet.

Oct. 23d. With the aid of Drs. Kinnemon and Leonard, I placed the child upon his back, on a table cushioned with folded blankets; and causing the thighs to be held in the attitude common in lithotomy, I introduced the *brise-pierre*, (a very small one, constructed for infants,) without difficulty. But I found it by no means easy to seize the calculus securely, in consequence of its small size and its smoothness. Several efforts to seize it having failed, I desisted for that time, lest I should inflict injury. A few drops of blood flowed on removing the instrument, but no serious irritation resulted.

Oct. 27th. I again introduced the instrument, and happily grasped the calculus at the first effort, and easily effected its fracture. Expanding the instrument, I seized and broke a considerable fragment, and comminuted one or two others of smaller size. I should have remarked that the expansion of the instrument, when I first seized the stone, indicated it to be about three lines in diameter.

On visiting the patient next day, I found that not much irritation had arisen, and that some fine debris and two or three considerable fragments had been evacuated. I repeated the operation on the 30th, in presence of Dr. Monkur, Dr. Cockey, Dr. Diffenderffer, and other gentlemen, but not promptly succeeding in securing the smooth nucleus which remained, I desisted.

Nov. 8th. I repeated the manipulation and seized and broke two or three fragments. On the second day after this, the nucleus, of the size of a pea, traversed the urethra and lodged itself behind the glans, occasioning complete suppression, and causing much distress. Dr. Monkur, whose residence was in the vicinity, was called in, and he promptly effected its removal. Although the urinary passages were still the seat of some irritation for a few days, yet soon all symptoms of calculus in the bladder disappeared. I twice explored the bladder

with sounds, and found it free from any foreign substance. Up to the present date the child has remained perfectly well.

CASE III.—My friend Dr. Whitridge, of Old Town, called me to see an infant child of Mr. Fouse, of Exeter street, October 25, 1835. The little patient had suffered symptoms of calculus from birth; his age was one year and ten months. I introduced a small catheter and immediately struck the calculus, which I judged to be small. The next day, assisted by Dr. Whitridge, I introduced an exceedingly small *brise-pierre* and sought the stone; but it eluded my efforts, and for the time I desisted.

Nov. 3d. Assisted by Drs. Whitridge and Cockey, I again introduced the instrument and included the calculus with but little difficulty. Its fracture was distinctly heard as the instrument closed upon it; and when it was withdrawn, a considerable portion of a small calculus was found entangled in the instrument. The debris of the stone continued to pass for several days.

Nov. 9th. I repeated the operation with similar success, and two or three days after the nucleus, of the size of a duck-shot, was discharged. I introduced the *brise-pierre* once more, but found nothing, and in a few days all irritation of the organs concerned disappeared, and the child has since remained, to this date, free from any evidence of lithiasis.

CASE IV.—*December 25th*, 1835, I saw Charles O'Connell, aged 17 years, living with his father in Long Alley, Baltimore, on account of symptoms indicative of calculus in the bladder. I sounded, and immediately struck what I judged to be a large and dense calculus, being free in the *bas-fond* of the bladder. He had suffered symptoms of its presence from an early age. The bladder was evidently the seat of a considerable degree of irritation, being impatient of its contents, tender on pressure upon the pubis, and occasionally discharging mucus, and at times a little blood. Although a degree of sympathetic gastric disturbance occasionally occurred, his general health was not greatly disordered.

From the ease with which the sound passed I deemed it unnecessary to effect any preliminary dilatation of the urethra. I however subjected him to the ordinary preparatory treatment, and relieved in a degree the irritation of the bladder.

Jan. 1st, 1836. I placed the patient on a firm table, covered with folded blankets; his head supported by a pillow, his legs firmly held by assistants in the attitude usual in lithotomy, and his nates projecting over the margin of the table. I introduced with ease a *brise-pierre* of large size, and at once struck the calculus. After the lapse of a

moment, to allow the spasm of the bladder to cease, I expanded the instrument and endeavoured to include the stone; but though I felt it distinctly, and varied the attitude of the instrument with care, I could not succeed in engaging it; and fearful of creating too much irritation, abandoned the attempt for that time.

Jan. 5th. I again introduced the instrument, and with precisely the same result. I now became convinced that the expansion of my *brise-pierre* was not sufficient to include a calculus of so large a size.

Jan. 10th. Having provided myself with a *brise-pierre* of sufficient size to grasp a calculus an inch and a quarter in diameter, I introduced it as before, (first having emptied the bladder,) and seized the calculus at the first effort. It was evidently very large, nearly filling the loop of the instrument. Its fracture was very audible as the instrument closed upon it; and from the manner in which it continued to be crushed till the instrument nearly closed, it was obvious that I had seized it in a most favourable manner. I seized and broke several fragments in succession, and, on withdrawing the *brise-pierre*, found it to include a portion of the stone, finely comminuted. For three days the debris of the calculus (its crust being composed of the phosphatic salts) continued to be freely discharged; some of the fragments, as in the former cases, lingering for a time in the urethra, and occasioning more or less irritation.

Jan. 15th. I repeated the operation with effect, and fragments of the calculus were freely discharged. I continued from this time to repeat the operation every third or fourth day, until I had used the instrument thirteen times. Believing that I now felt in the bladder nothing but small fragments, which I flattered myself would be soon discharged, I discontinued my attendance for several weeks. On visiting him after this interval, I found him still conscious of some irritation in the bladder, and of the presence of some mechanical impediment to the free flow of urine. I again introduced the *brise-pierre*, and caught a considerable fragment at the first effort and crushed it. I also either broke portions of this or other pieces. On withdrawing the instrument I directed him to urinate, when four or five fragments were expelled from the bladder with force. These proved to be all that remained, as I never after was able to detect any thing in the bladder, and from that time all the symptoms ceased. He remains perfectly well to the present day.

This operation was witnessed by Dr. Dunan, Dr. O'Donovan, Dr. Baker, Dr. Dunbar, Dr. Cockey, and several other medical friends. On most occasions the patient appeared not to suffer severely from the operation. Usually he aided in the preparation necessary: and

when the operation was completed he went for water, &c., and assisted in washing the instruments. He was at no time confined to his bed a single day in consequence of the operation, nor was there ever any evidence of serious inflammation of the bladder.

CASE V.—November 20th, 1835, I visited B. Howard, Esq., of Baltimore county, a highly respectable gentleman, living about twenty miles from Baltimore, who was supposed to labour under calculus of the bladder. Mr. Howard was about 65 years of age, of exceedingly delicate general health, having laboured under inveterate dyspepsia for many years. His digestion was so capricious that he could take nothing but the simplest articles of aliment, and those in small quantity; he was emaciated and feeble. The bladder was exceedingly sensitive and impatient of its contents. The urine was often charged with mucus and sabulous matter. There was a remarkable sense of weakness in the loins, and tenderness on pressure in the region of the kidneys. Mr. Howard had had a severe paroxysm of nephritic irritation about nine months anterior to the present date, and undoubtedly at that time the calculus had passed from the kidney to the bladder, as ever after that period the symptoms of stone in the bladder were manifest. He had had, however, several severe attacks of nephritic irritation after the stone had entered the bladder, and occasionally had passed calculi of small size. These paroxysms of kidney disease had on some occasions well nigh proved fatal.

On sounding, I found a small calculus in the bladder; conjecturing that it might be of the size of a small chesnut. The introduction of the sound caused a good deal of pain. I regarded this case as being more unfavourable than most that I had encountered, either for lithotripsy or lithotomy; but as the calculus was so very small that I might hope to effect its removal at one, two, or three sittings, I came to the conclusion that lithotripsy was as applicable to the case as lithotomy. The latter operation was, moreover, entirely out of the question, as the patient would not hear it named. Mr. H. had been under the care of his son-in-law, Dr. Gittings, and that of his son, Dr. Howard, very intelligent medical gentlemen, and by their judicious management was as well prepared for the operation as I could expect him to be, and I therefore at once introduced the *brise-pierre*, first having drawn off the water. I did not seize the calculus till I had varied his position and the altitude of the instrument three or four times. I then caught and fractured it with ease, and subsequently broke two or three fragments. I then withdrew the instrument, clogged in some degree with the debris of a very red, lithic acid calculus. Although I manipulated with as great delicacy as possible, I inflicted severe

pain in this operation, and considerable irritation of the bladder resulted, accompanied with increase of constitutional disturbance. We prescribed an anodyne by the mouth, and an anodyne enema.

Nov. 25th. I again visited Mr. Howard, and found that he had passed sabulous matter and several fragments. The irritability of the bladder had abated in a degree, and I again used the instrument with very similar results.

Dec. 1st. I used the instrument for the third and last time, being then satisfied that I had thoroughly comminuted the calculus. Much suffering attended the operation, though I handled the instrument as lightly as possible. Much irritation and increase of inflammation also followed. The case was managed very judiciously in my absence by the attending physicians. The remainder of the calculus passed, and all mechanical impediment to the flow of urine ceased.

After the lapse of about ten days I again saw Mr. Howard. The irritation of the bladder had very much abated, but there had occurred a severe nephritic paroxysm, very similar in its character to those under which he had before suffered so severely. The symptoms were precisely such as indicated the passage of another calculus along the left ureter. It proved impossible to conquer them, and the patient sunk between two and three weeks after the operation.

There was at no period of the process in this case any serious mechanical lesion inflicted on the bladder, and the irritation caused by the use of the instrument had much abated before the nephritic attack came on. I cannot think, therefore, that the patient perished from the immediate effects of the operation, though it must be admitted that the operation had rendered him less able to endure a paroxysm precisely similar to such as he had before suffered. I regret that no autopsy was obtained in this case.

CASE VI.—Francis Affireaux, seven years of age; the child of a grocer living in Old Town; had had symptoms of calculus from infancy. I was called to examine him by my friend Dr. Kellogg, of Old Town. We struck immediately a calculus, which proved to be of the size of a small hickory-nut. The bladder was found to be comparatively healthy; every circumstance, indeed, was favourable to lithotripsy.

April 4th. The proper preliminary treatment having been premised, I introduced the *brise-pierre* with ease, (without having previously drawn off the water,) seized the calculus at once, and effected its fracture. I seized and broke several fragments in succession before I withdrew the instrument, which, when withdrawn, was found to include a portion of the debris. The boy scarcely complained during

the operation, and the bladder suffered but very little irritation. Several fragments passed on that and the next day, some of them lingering in the urethra and causing much annoyance.

April 6th. I repeated the operation with equal ease; broke several fragments with very little pain to the lad, and withdrew the instrument when I might, without annoyance to the bladder, have continued the manipulation till I had reduced the fragments to smaller size. The truth was, I did not expect to complete the operation at two sittings. This, however, was done, for the fragments all passed after this operation, though some of them were so large as to become impacted behind the glans, and to give us a great deal of trouble. I removed several with the forceps and probe; and Dr. Kellogg, who was called to him in the night, removed as many. This was effected with a good deal of difficulty, in consequence of a tendency to phymosis which existed. More pain was suffered in these attempts than from lithotripsy, and some degree of inflammation of the penis resulted. In four days, however, all the fragments were evacuated, and on twice exploring the bladder carefully I detected nothing. He has remained perfectly well up to this date.

I am very confident that I could have effected the removal of the calculus in this case at a single introduction of the instrument, without injury to the bladder, had I persisted longer in its use on the first occasion. By so doing I also might have so reduced the fragments as to render their passage easy along the urethra, and to prevent their becoming lodged in the transit. Thus the most painful part of the process would have been obviated.

Remarks.—It will be observed in the perusal of the foregoing cases that I have generally operated on the empty bladder. Such, I am well aware, is not the practice recommended by other operators, and therefore my first attempts were not made upon the empty organ. It was only when I had failed in seizing the calculus with facility, in the bladder partially filled, that I emptied the organ before manipulating further. In some instances, however, I seized the stone in the bladder, containing urine, with ease.

There certainly does not exist the same objection to the use of Jacobson's instrument on the empty bladder that justly obtains against the employment of Civiale's, or indeed any form of the *pierce-pierre*, or of the *brise-coque* of Heurteloup; any instrument, in short, which expands branches in the bladder. The *brise-pierre* of Jacobson merely opens a loop in the bladder, and presents nothing which can possibly pierce and become entangled in the folds of that organ. A fold of the

mucous membrane may enter laterally the loop of the instrument, but never can become so engaged as to embarrass the operator. The yielding and elastic resistance which it furnishes is instantly distinguished from sudden check to the closure of the instrument caused by the stone, and nothing can be easier than for the operator to disengage the *brise-pierre* by slightly changing its position. I have several times felt a fold of the bladder within the loop, but am confident that I have never contused in any degree the included portion. Probably nothing but the mucous lining of the bladder could ever be included in the loop, as the muscular coat of the organ is never thrown into folds unless the bladder is paralysed.

Professor Gibson, in a valuable article on lithotripsy, published in a recent number of this Journal, manifests a decided preference for the *lithotripteuse* of Heurteloup over the *brise-pierre* of Jacobson. After admitting many of the apparent excellencies of the latter instrument, he pronounces it a "dangerous weapon." With deference to the opinion of that distinguished surgeon, I would suggest that he has probably much overrated the perils attending its employment, as I am confident his candour will admit whenever he puts the instrument in use in a sufficient number of cases to determine its merits. He deprecates the contact of the angular joints of the instrument with the surface of the bladder, and speaks of it as "well calculated to rake and harrow the plain surface of the bladder." An incautious and rude hand may rake and harrow the surface of the bladder even with a common catheter; but so careful an operator as Professor Gibson would, I am confident, never find it necessary to inflict this injury upon the organ in endeavouring to include the calculus.

Nor have I experienced in the use of the instrument the difficulty which the same writer apprehends in fixing firmly the calculus when included. I have scarcely ever known the stone to elude the instrument, when once caught, without suffering fracture.

That the bladder is occasionally irritated by the joints at the moment that it is expanded in the bladder, and also by the movements of the instrument in searching for the calculus, is not to be denied; but this objection obtains against every apparatus employed for seizing and crushing the stone in the bladder, and is an insuperable difficulty only in those cases to which lithotripsy is not applicable, and in which lithotomy should be resorted to. Even my limited experience will justify me in assuring Professor Gibson that Jacobson's instrument is not only "admirably calculated, *apparently*, for success," but *really* so. Besides, it has been thus far much the most successful instrument as yet employed for this purpose in America. Dr.

Randolph, if I mistake not, has completely succeeded in eighteen cases of lithotripsy, and gives Jacobson's instrument a decided preference over all others. The public and the profession are largely indebted to this distinguished surgeon for the confidence beginning to be placed in this operation in our country. I have heard of no instance in which Jacobson's *brise-pierre* has inflicted fatal lesion upon the bladder, and none in which, from its being broken or bent, it has been found difficult to disengage it.

But if Jacobson's instrument has its peculiar imperfections, it is not to be denied that there are very decided objections to the *lithotripteur* of Heurteloup. The mandibles of the instrument, terminating in obtuse points, are certainly as liable to irritate the surface of the bladder as are the angles of the *brise-pierre*, and certainly they must be much more liable to seize and to hold duplicatures of the organ. Surgeons are well aware that in lithiasis the bladder is frequently in the columnar condition, the muscular coat having undergone such hypertrophy as that its fasciculi, intersecting each other in every direction, present the appearance of the fleshy columns of the heart. Between these are formed cells, into which the mucous membrane is reflected. In such a condition of the organ it is easy to conceive that the beaks of the *lithotripteur* may enter the cells, and, when closed, seize the fleshy columns of the bladder.

Should the instrument of Heurteloup be broken in the bladder, the surgeon would have no means of extracting a fragment but by cutting. Should it be in any considerable degree bent, it might become impossible to close and extract it without inflicting great violence on the parts. Indeed, I have heard of an instance in which this difficulty occurred and caused much embarrassment.

Both the instruments in question are, however, valuable, and infinitely to be preferred to the apparatus of Civiale, and both should be in the possession of the surgeon who attempts lithotripsy. He will undoubtedly meet with cases in which each will be found preferable to the other; but so far as my own experience and observation justify a conclusion, the *brise-pierre* is decidedly the preferable instrument for a majority of cases.

Queries are often rather absurdly made in regard to the comparative merits of lithotripsy and lithotomy. In regard to most cases of stone, they can be compared with no more propriety than can lithotripsy and amputation. Where the calculus is small and the bladder healthy, no one can hesitate for a moment to pronounce lithotripsy the eligible operation; indeed, in such a case lithotomy is unnecessary, cruel and perilous. But on the other hand, when the stone is very

large and the bladder irritable, it is equally manifest that lithotomy is the only operation which science and humanity can recommend. Cases will, however, occur, in which it will be difficult to decide to which operation preference is to be given.

To how large a proportion of cases lithotripsy is applicable, the experience of surgeons has not as yet determined. As the operation becomes more generally known and practised, the proportion favourable for lithotripsy will undoubtedly increase, as patients will submit to lithotripsy while the calculus is small.

Within the last two years there have occurred in my practice in the city of Baltimore, twelve cases of stone. In one half of these I have performed lithotripsy, and in the remainder lithotomy. In one of the latter I attempted lithotripsy, but was compelled to abandon it. These, I believe, are all the cases which have occurred in Baltimore in that time.

It will be observed that in two or three of the cases related, my patient suffered in no small degree from the lodgment of fragments in the urethra. I flatter myself that I shall hereafter successfully provide against this evil, by effecting a more perfect comminution of the fragments, and by a contemplated improvement in the urethra forceps employed for the extraction of foreign bodies from the urinary passage, and of which I shall give a description in some future number of this Journal.

Baltimore, August 26th, 1837.

ART. III. *An Inquiry into the Pathology and Treatment of Secondary Abscesses, and other consecutive Disorders resulting from injuries and Surgical operations.* By JOHN WATSON, M. D., of New York. (Read before the New York Medical and Surgical Association. July 29th, 1837.)

Early in the course of my professional studies I was led to reflect upon some of the results of severe operations, by a case that occurred in the New York Hospital, upon which Dr. J. Kearny Rodgers operated, and which resulted fatally, with depositions of pus in various parts of the body. Cases of a similar character, about the same period, fell under my observation; but, unable at the time to resolve the connexion between the operation and the secondary disturbance, I allowed them to pass without any special investigation.

CASE I.—In the summer of 1835, a case occurred in the New York Hospital, in which purulent depositions appeared spontaneously in different parts of the body, and in a manner somewhat similar to those that follow injuries. The patient was a young seaman. He had suffered from intermittent fever, and, if I remember rightly, he had had enlargement of the liver, or, at any rate, some functional disturbance of that organ. He entered the Hospital for erysipelas of his arm, which was not connected with any known injury, and was diffuse and extensive. Matter formed in the subcutaneous cellular tissue, and undermined the integuments in various parts along the whole of the limb. Sometime after the subsidence of this disease, the patient, remaining in a cachectic condition, had a succession of abscesses on different parts of his body and limbs. In general they were large, and, although circumscribed, they arose without any induration around them, and formed without the usual symptoms that precede cellular abscess depending on local inflammation. The skin above them was not discoloured; when punctured, and the matter evacuated, they collapsed to the natural level of the surrounding integuments, and healed without any further trouble. The largest abscess was on the back; it might have contained eight or ten ounces of purulent matter. One of the knee joints became involved, and the house surgeon was of opinion that effusion had taken place in the cavity of the joint itself, but of this he was not certain. After appearing thus at successive points in the cellular tissue beneath the skin, the purulent deposition finally settled upon his lungs, and he died.

From the preceding case I was led to believe that depositions similar to those following injuries and operations, may also be consecutive to spontaneous derangements; and consequently, that the connexion between the secondary abscess and the local injury by which it is brought about is neither immediate nor essential. Still I was unable to account for the secondary affection; and, by referring to authorities, I found that it had been already the subject of considerable speculation.

According to the views of some, the secondary abscess arises from a simple transposition of matter from the seat of a primary wound, the matter being taken up by absorption, carried through the circulation, and finally deposited, without inflammatory action, at the spot in which it is afterwards discovered. Others attribute it to the influence of special sympathies between the parts first affected and those that become disordered afterwards. Others, again, attributed it to constitutional irritation. One writer would have that secondary abscesses are merely the result of local injury received at the part secondarily

diseased. Finally, by the most recent observers, they are attributed to a vitiated condition of the blood, which is itself the effect of purulent depositions, or other inflammatory exhalations, forming within the cavity of the veins and mixing with the torrent of the circulation. Let us see whether the following cases can throw any light upon this subject.

CASE II.—James Hall, the patient alluded to at the commencement, having suffered for years from necrosis of the femur, underwent a protracted operation for removing the dead portions of bone, November 17th, 1831.

The opening made through the callus was about six inches long. The operation lasted two hours. The vessels of the bone were cauterized, to prevent hemorrhage; and into the orifice of one of them a small tent of sponge was inserted and left. The patient did not lose much blood, but was greatly exhausted by the operation. Just before it his pulse was 84; on the day following it was 126; and never but once afterwards fell lower than 114, except on the seventh day, when it was at 100, while he slept. Immediately after the operation his stomach became irritable; he vomited every thing he took for about three days. On the fourth day he retained a dinner of chicken broth, and appeared to improve until the eighth day. His stomach again became irritable and continued so; he was unable to retain any sort of food except taken with lime-water, or porter and lime-water.

On the 26th of November he began to complain of *soreness and tension along the right wrist and fore-arm*. Integuments over these parts hotter, but not redder than natural; no swelling.

On the 27th, arm still more painful, *somewhat swelled*; no redness. Superficial veins turgid; pain on pressure excessive. *Left shoulder* also painful. Patient complained of "soreness all over him," and said that his stomach was burning hot. Tongue red and moist.

28th. A small red and painful spot *between the eyebrows*. The whole of the right fore-arm swelled and extremely painful; skin glossy, and superficial veins very full; countenance sunken; no particular soreness in the wound.

29th. He expired.

In the *post-mortem examination* purulent effusion was found deeply seated, and in great abundance, within the cellular structure of the fore-arm, and of the other parts that had been the seat of pain. The wound itself presented no remarkable appearances. I have not noted the state of the viscera, and do not recollect whether they were examined; nor was any notice taken of the inner coats of the vessels.

In the preceding case we have absolute evidence of local inflammation of the parts in which purulent matter was subsequently discovered.

We find also a turgid state of the superficial veins, so striking as to have been especially noticed, without the knowledge of any theory on the subject at the time. Aggravation of the constitutional symptoms on the 8th day, external inflammation manifested on the 10th, and death on the 13th day after the operation. The purulent deposit, then, in this case, was not from a simple transposition or metastasis of pus from the primary injury, independent of inflammation in the parts containing it. Nor were the secondary affections the consequence of local violence, no external injury having been received.

CASE III.—Elizabeth Towers, aged 36, an intemperate woman, was admitted into the New York Hospital November 28th, 1832, having fallen into the fire, while intoxicated, four days previous. The burn had extended deeply along the whole of the right arm, over the shoulder and breast, as high up as the clavicle; on the right cheek and forehead, involving the eyelids. When admitted, she was still in a state of prostration. She was at once put on an anodyne and stimulating course, which was continued until the sloughs began to separate.

Dec. 3d. Delirious and noisy; pulse 100, feeble. This morning she began the use of quinine, and continued it almost daily till her death.

Dec. 6th. Line of demarcation on the breast, extending round the shoulder to the back of the scapula. Mind composed; pulse 120; skin warm.

Dec. 7th. Subsultus; ulcerated surfaces dressed with powdered cinchona. The constitutional symptoms after this date remained about the same for several weeks; the patient resting at night under the influence of anodynes.

Dec. 11th. Sloughs on the arm, shoulder and breast, all separated. The fore-arm and hand one putrid mass; the bones themselves in places reduced to cinder, and a multitude of mites, some as large as flies, burrowing in the soft parts. For destroying these and removing the fetor, the sores were washed with a solution of the chloride of lime. At this period the shoulder would have been amputated at the joint, had there been integument enough to cover the wound.

Dec. 15. Edges of the sores at the upper part healthy and disposed to cicatrize. Doubts now began to be entertained of the fatal tendency of the case, owing to the remarkable manner in which the general system bore up against the injury.

Jan. 15th. Sloughs appearing over the sacrum in consequence of pressure from lying. Much more feeble than at last report.

About this time the *cornea of the right eye became inflamed*; there

was a deposition of *purulent matter within the chamber of the aqueous humour*, and in the course of three or four days the *whole cornea sloughed away*. The granulations on the forehead and other parts now began to fade, so much so as to be almost blanched. The patient lingered until the 9th of February, at which date she expired.

The sloughing of the cornea in this case was not by the extension of inflammation from the diseased integuments and parts about the face and forehead. The external ulceration had existed for six weeks without extending, or involving the eye; and when the eye itself took on the diseased action, the granulations were faint, and the ulcers in a languid condition. The disease of the eye appeared suddenly, and the destruction of the organ was the work of a few days. I am therefore disposed to group it among the secondary results of injuries, and believe myself borne out in this by a number of cases on record in which similar destructive inflammation of the eye was consecutive to diseases in remote parts of the system. Thus, in one case, a patient of Mr. Earle, of St. Bartholomew's Hospital, and from whom he removed a portion of a varicose vein of the leg for the cure of an obstinate ulcer: this form of disease in the eyes was among the secondary consequences. The operation was performed on the 25th of June, 1828, and the disease of the eyes appeared on the 3d of July following. The patient died on the 4th of July. The post-mortem appearances were such as indicated extensive phlebitis in the leg, with secondary abscess and inflammations in various parts of the body; and, "on removing the right eye, destructive changes were found to have taken place within the globe: the crystalline was so soft as to yield to the slightest touch; the vitreous humour was of a reddish yellow colour, and the vessels could be distinctly seen traversing its membrane; the retina was of a deep red colour." Mr. Arnott gives a similar case consequent upon an operation for tying the carotid, and in which case the jugular vein was injured. "About the tenth day the vision of the left eye became impaired, and was quickly lost." "In the course of a few days the coats of the eye sloughed at the upper part, and its contents were evacuated. Whilst these changes were occurring in the eye, collections of matter formed without pain in different parts of the body, in both shoulders above the insertion of the deltoid muscles, over the sacrum, &c." Five months afterwards the patient died, worn out by hectic; and, on post-mortem examination, "a portion of the jugular vein to the extent of two inches was found

* London Medical Gazette, Vol. II. p. 286.

† Medico-Chirurgical Transactions, Vol. XV. p. 118.

wanting, the upper and under extremities being shrunk, ligamentous, and gradually lost in the cellular substance. On opening the head, pus was found effused in great quantity between the tunica arachnoidea and pia mater, along the base of the brain, and the whole length of the spinal cord. The intermuscular cellular substance of the loins was loaded with pus. The viscera of the abdomen and chest were not examined." In the thirteenth volume of the *Medico-Chirurgical Transactions*, (p. 189,) are several other cases of similar character, related by Dr. Marshall Hall and Mr. John Higginbottom. In these the destructive inflammation of the eye followed the puerperal state, occurring from five to eleven days after delivery, accompanied with suppurative inflammation of the integuments in different parts of the body, and all terminating fatally. Five of the cases occurred under the observation of the gentlemen mentioned, and the sixth under that of Mr. Ward. They do not attempt to give any solution of the cause of this affection of the eye; but the subsequent observation of others is, I trust, sufficient to enable us to account for it, and to group the train of symptoms here noticed, in common with others occurring in the puerperal state, with secondary abscesses, and the other consecutive affections. Arnott, indeed, has already done this; and I cite these cases simply in support of the opinion already advanced, that the disease of the eye in the case of Towers was not a mere local inflammation by extension from the integuments, but that it is to be attributed to the same cause as secondary inflammations in other parts.

CASE IV.—In the month of November, 1836, a black man, from 45 to 50 years old, was admitted into the New York Hospital with popliteal aneurism. The patient had a cachectic appearance, and was much emaciated. The artery, a few days after admission, was secured by Dr. J. K. Rodgers. On removing the dressing about a week after the operation, the wound was found to present an unhealthy appearance; no attempt at adhesion was observable; and, in a word, the wound seemed to take on a sloughy appearance from the first. The man became typhoid without any pneumonic symptoms. The wound, after the removal of the ligature, gave rise to secondary hemorrhage. The patient was kept on a stimulating and tonic course, but without benefit; and he sunk, just four weeks after the operation.

I made the post-mortem examination in presence of Dr. A. H. Stevens. The lungs were beset in all parts with distinct and circumscribed abscesses, filled with consistent pus, and varying from the size of a pea to that of a marble. The intermediate portions of the lungs presented nothing like tubercles. There were several spots of red hepatization, especially in the lower portions of the lungs.

I have no recollection as to the state of the pleura or pericardium. The heart was healthy, and also the liver. The blood-vessels were diseased as high up as the external iliacs: they contained no purulent matter, but there was an abundant deposition in their sheath, not exactly purulent, but presenting an appearance intermediate between that of pus and coagulable lymph. The femoral vein had been injured by the passing of the ligature, or it had ulcerated from the pressure of the ligature upon its side, leaving a small opening through its coat. Both vessels were filled with dark grumous blood, and their inner coats thickened, rough, and of the same colour as their contents. The iliac vessels appeared healthy, both artery and vein. No other vessels at any distance from the wound were examined. State of the brain not noted.

In this case we have an original wound unhealthy from the first, without the formation of pus: inflammation of both vein and artery as high up as the point where they enter the abdomen: abscesses of an acute character, and inflammatory congestion of the lungs: without knowing whether the inflammation within the vessels prevailed in any other part than in that leading immediately from the wound, and without detecting pus in any part of their cavity. This, as well as some other cases that I have to relate, tends to confirm an observation first made by Arnott, that inflammation of the veins has a tendency to terminate at the point where collateral vessels enter them, or where they themselves terminate in larger trunks. He has thus shown that the speculative opinion of Hunter* who believed that phlebitis always proves fatal, by extending itself continuously along the vessels from the part first affected to the heart, was not drawn from observation: and, although quoted by several who, since the days of Hunter, have written on phlebitis, that it is unworthy of credit.

CASE V.—William Hamilton, a sturdy seaman, about 38 years old, while at sea, in January last, fell from the yard-arm and fractured his right thigh, producing a compound fracture above the middle of the femur. Eight days afterwards, viz: on the 15th of January, 1837, he was admitted into the hospital, and the broken limb placed on the double inclined plane. About five days subsequently, suppuration commenced in the wound and became very profuse. The matter, in consequence of the elevated position of the knee, was not freely and

* See Hunter's paper on Inflammation of the Internal Veins, in the first volume of the *Transactions of the Society for the Improvement of Medicine and Surgical Knowledge*; and also the comments upon the same of Hunter in the paper already referred to, in the 12th volume of the *Medical and Chirurgical Transactions*.

completely discharged as it was secreted, but burrowed between the muscles and gravitated towards the groin. The discharge soon became so abundant that thoughts were entertained of amputation; but the patient objected, and his general health not yet suffering much, the operation was deferred. At length he began to fail; and as all hopes of saving the limb was at an end, it was deemed proper to remove it. The amputation of the thigh, by the double-flap operation, was performed by Dr. Post on the 25th of April. Considerable time was spent in securing vessels, and the patient lost a great quantity of blood.

It should also have been remarked that, when first admitted, he had also a severe injury of the head, and for several days he was threatened with phrenitis, for which he was depleted very freely.

For some time subsequent to the operation he complained of an unusual degree of tenderness in the stump. His general symptoms were a very rapid pulse, loss of appetite, and great prostration. On the fifth day he was put on the use of bark and wine; but after continuing this treatment five days it was suspended, his symptoms having apparently been aggravated by it. Subsequent to this he was under very little active treatment, simply taking his anodyne at night.

On the 7th of May he began to be troubled with diarrhœa, which continued up to the time of his death; and about this time he also had, for the first, some symptoms of pulmonary difficulty. All this while the stump had progressed favourably. A portion of diseased structure had been left between the cut surface and the groin; the face of the stump, however, gradually healed. Subsequent to the 8th of May the pulmonary symptoms became more alarming, and on the 12th he expired.

Post-mortem examination, twelve hours after death.—The face of the stump was cicatrized; the integuments were adhering, with the other soft parts, to the cut end of the bone. The saphena vein was filled with firm coagulum, that could be easily withdrawn without adhering to the sides of the vessel. A large fistulous ulcer extended apparently on the surface of the pectineus and short portion of the triceps, along the inner side of the great vessels, the sheath of which appeared to form a part of its wall. It reached from the groin to the lower and posterior part of the stump, where it opened externally; its parietes were sloughy, and of a dark grayish or greenish colour. Deep under the face of the stump anteriorly was a collection of purulent matter, apparently not connected with the fistulous ulcer; for, when freed by incision, the matter gushed out with great force, as if it had existed under considerable pressure. A number of ligatures,

that had not been removed prior to the closing of the wound, remained buried in the soft parts.

On laying open the femoral artery, from its extremity to the origin of the profunda, it was found filled with grumous and partially decomposed blood. The sheath of the vessels was diseased and thickened. Above the profunda the artery was closed by a plug of fibrin, which did not adhere to the sides of the vessel, and was about two inches long; above this the artery was sound. The femoral vein and its continuations, as far on as the ascending cava, were completely filled with purulent matter, unmixed with blood, and adhering to the sides of the veins in layers like thin paste. In these layers there might have been a mixture of fibrin. Through all this extent the coats of the veins were not abraded: but at the termination of the iliac vein into the cava the calibre of the former was plugged up with a partially organized deposit, which was an inch or more in extent, and, on tearing it from its attachment, the inner surface of the vessel was found rough and granular. This deposit was of a dark red colour, probably composed of fibrin and the red particles of the blood. From its situation it effectually barred the purulent matter from entering the circulation. Above this the cava contained some coagulated blood, and was quite healthy. A patch of ulceration was found on the inner surface of the colon. Other organs of the abdomen healthy.

On opening the thorax, the left pleura was found to contain about a pint and a half of sero-purulent matter, and the membrane itself coated with layers of pus, and studded in spots with coagulable lymph. The right pleura was also coated with purulent matter, but there was not much effusion into its cavity. There existed two ill-defined abscesses, with ragged and irregular walls, in the lower part of the left lung; and one spot of apparent ulceration, about as large as a quarter of a dollar, on the outer surface of the upper lobe. The middle lobe of the right lung was infiltrated with purulent matter in every part, but no circumscribed abscess was observed. The whole of the parenchyma of the lung appeared to be permeable to air: its colour was that of gray hepatization. The lower lobe of this lung was still more extensively infiltrated: it was less pervious, and in its centre it presented the appearance of red hepatization. Heart apparently healthy: its left cavity empty, the right filled with coagulated blood.

In this case, besides the primary injury with inflammation communicated to the veins leading from the limb, we have ulceration of the colon, with pneumonic and pleuritic inflammation. We have here no right to say that the fluids were contaminated. The matters found in the thorax were beyond a doubt the result of local inflammation

there; and the plug of lymph partially organized in the upper part of the iliac vein, is a most beautiful illustration of the efforts of nature for preventing purulent matter from entering into the circulation and contaminating the blood.

CASE VI.—John Smith, a labouring man, aged 40, was admitted into the New York Hospital April 28th, 1837, with compound fracture of his right arm, within a few inches of the head of the humerus; the accident caused by the blasting of a rock. I am not able to give the particulars of the early part of the case. The patient's symptoms about the middle of May were very alarming; I saw him then for the first time. The arm was in a state of gangrene, and he in a low muttering delirium, with subsultus, and all the signs of general depression. He continued without much apparent change in his symptoms until the 1st of June, when he expired. He had been on the constant use of tonics and diffusible stimulants. At one time a consultation was held on the propriety of amputation at the shoulder-joint, but the patient was then too much exhausted, and the dead parts of the limb were taken away simply to relieve the patient, and the ward in which he lay, of their fetor. Previous to his death he had several attacks of secondary hemorrhage, but I could not learn the amount of blood lost.

Post-mortem appearances.—The attachment between the axillary vessels and nerves stronger than natural; the nerves themselves unusually firm, and their neurilema of a deep red colour. The artery at its mouth (for it had been lacerated by the accident) blocked up with a partially organized coagulum about half an inch long, and attached by its lower extremity to the sides of the vessel. A small branch, from which the hemorrhage had probably occurred, was running from the main trunk, just at the termination of the plug of lymph; and a much larger one, which I took to be the external mammary, about an inch from the lacerated extremity. The internal coat of the artery, reaching from its extremity to the heart, was of a bright red colour, uniform, and uninterrupted by any thing like healthy structure; it appeared also to be thickened as well as highly coloured, but no abrasion was noticed on any part of its surface. The vein leading from the arm was also inflamed, but had not the florid redness of the artery; its inner surface was coated with a thin layer of puriform reddish matter, which could be easily scraped off. Having been called away at this stage of the examination, I left it to Dr. George Hodgson, who informed me that in tracing the cava descendens and vena innominata, an incision was accidentally made into the latter vessel, and gave exit to about a dessert-spoonful of bloody matter, much like the contents of a recent abscess. The lining membrane of

these vessels was in the same state as that of the axillary vein. The right cavity of the thorax contained about twenty ounces of bloody serum, of a light chocolate colour; the left about sixteen ounces; the pericardium about four ounces, and the peritoneal cavity about sixteen ounces, making in all about three pounds and a half. The substance of the lungs was healthy.

On cutting into the heart, the lining membrane of the right auricle was found highly injected, in colour resembling half ripe plums, and mottled in patches. The tricuspid valve also mottled, and of a deeper red than the other parts; the right ventricle altered but slightly; the semilunar valves of the pulmonary artery also deeply tinged; pulmonary vein healthy; the left auricle not so much altered in colour as the right; the mitral valve quite red, but not so much so as the tricuspid; the semilunar valves of the aorta very deep red, and the membrane over the corpora aurantii of the colour of ripe apple seeds. Abdominal viscera apparently healthy. Brain not examined.

In the preceding case the inflammation of the arterial cavities was the most prominent lesion, but there were unequivocal evidences of acute inflammation in the course of the veins and in the right side of the heart; yet no purulent depositions were discovered in any of the viscera, the parenchyma of the lungs and liver being in their natural condition. *Purulent matter in the veins, therefore, does not necessarily lead to purulent depositions in other parts.*

CASE VII.—The particulars of the following case were recently communicated to me in a letter from my friend, John Hamilton, Esq., of Dublin.

A robust man, aged 28, fell into a trench upon some stones and dislocated his right femur. The accident happened twelve weeks before his admission into the Hospital; and during this time, having at first been under the care of an ignorant surgeon, he had been treated for a supposed fracture of the thigh, and the limb kept eight weeks in splints. The dislocation was upwards and backwards. On the 2nd of February, 1837, an attempt was made to reduce the displaced bone. The patient was bled, and the pulleys applied; but after half an hour's trial, with great torture to the patient, the attempt was given over. On the day after the operation the patient was in a high fever, complaining of pain in his arm at the place where venesection had been performed. It was clear that venous inflammation was commencing—it ran a rapid course. Abscesses formed in the course of the vein, and were opened; extensive erysipelas ensued, running over the arm, neck, down the whole of the back to the iliac crests on either side, and making its way forward to the median line. His pulse now

ranged at 164. He died on the 13th of February; that is, eleven days after the attempt at reduction.

Post-mortem appearances.—Cellular tissue around the vein matted together with lymph, with here and there small purulent deposits; collections of matter also existing among the muscles of the arm, and even below the seat of the wound. The cephalic vein, for four or five inches, filled with pale brownish pus, reaching as high up as the insertion of the deltoid, and above this the vein was healthy. Purulent matter also existed in the vein for an inch below the place of puncture; beneath this it was filled with dark clot. The cellular tissue of the arm infiltrated with reddish serum. Extensive adhesions between the pulmonary and costal pleura; the pericardium contained half a pint of serum, and the surface of the heart and pericardium was coated with a pale greenish soft lymph, and spotted with blood in many places. The head of the thigh bone was resting a little above the brim of the acetabulum, the opening of which was greatly contracted by the torn capsular ligament which had fallen into it, and become greatly thickened, forming a broad band across the cavity, which was filled with black fluid blood. The round ligament had been torn out with the head of the bone, and formed firm adhesions to the muscles with which it lay in contact. A large abscess existed around the joint, containing half a pint of pus.

CASE VIII.—The following case has already been submitted to the Society by Dr. J. L. Vandervoort, to whom I am indebted for it. I saw the case myself during its progress, and attended the post-mortem examination.

The patient was a young robust female, who, about nine weeks prior to her admission into the Hospital, had been delivered of her first child. Her labour was a natural one, and the child of ordinary size. Nothing unusual occurred, and the patient was doing well until the end of the third week. At this period her child died; and now, owing, as was supposed, to imprudent exposure to wet and cold, the lochial discharge and the secretion of milk suddenly ceased, and were speedily followed by intense pain in the right hip, extending to the linea alba in one direction, and to the lumbar vertebræ in the other. In this state, under treatment for supposed rheumatism, she remained three weeks, when tumefaction commenced in the right groin, and, extending downwards, continued to progress until the whole member became involved in the same tense, shining, inelastic enlargement. The right labium also partook largely of the swelling, the left remaining unaffected. To these changes were superadded an excessive augmentation of pain and severe rigors.

When admitted into the Hospital, (about the 27th of November, 1832,) the limb presented the following appearances:—Extensive enlargement from the groin to the toes, exhibiting a surface smooth, shining, and of pearly whiteness, pitting slightly on pressure, and painful when touched or moved; the right labium distended with serum; uterine region tender to the touch, uterus itself seemingly much enlarged. The countenance of the patient was pale or chlorotic, and expressive of much suffering. Tongue moist and white; pulse small and frequent; bowels confined. The treatment after admission, in consequence of the advanced state of the case, was altogether palliative.

For two or three days after admission the patient suffered a repetition of the rigors, which were moderated by sudorific anodyne draughts. For the first week the limb appeared to lessen, the severity of the pain moderated, the countenance and appetite improved; but now the left leg began to swell, and a large sloughing sore from pressure appeared over the trochanter major of the right thigh, and this in a few days was followed by a similar one on the left thigh. A copious fetid purulent discharge soon took place from the sore on the right hip, and careful examination detected deep seated fluctuation here. On the 11th of December, two weeks after admission, in attempting to remove the slough, about a pint and a half of pus escaped, with considerable relief to the patient, who was now put upon a more generous diet, with porter and quinine. During the following week the abscess continued to discharge profusely; the patient gradually sunk, and died on the evening of the 19th of December.

On the following day the body was examined, and Dr. J. K. Rodgers furnished Dr. V. with the following account of the post-mortem appearances.

The integuments of the abdomen being turned aside, it was ascertained that the opening in the right hip communicated with an abscess which passed into the cavity of the pelvis and occupied its right side, with space sufficient to contain more than a pint of pus; thence it passed down behind the femoral vessels to the middle of the thigh. The external iliac and femoral vessels (veins) of the right side were thickened and nearly filled with coagula; and the inguinal, immediately behind Poupart's ligament, was completely obstructed for about three-fourths of an inch with a yellowish substance apparently organized. The left external iliac and inguinal veins were also thickened, but not to the same extent as those of the right side. The left femoral was also obstructed for about half an inch about one-third way down the thigh with a substance similar to that on the right side.

The internal iliacs were somewhat thickened, but slightly. The uterine veins were apparently free from disease. The arteries of the lower extremities were rather more contracted than natural; absorbents and glands unaffected.

In the preceding statement we have no account of the viscera of the chest, or of those within the abdomen, at any distance from the original disease. If I remember rightly, they were not examined. The original disease, in this case, was probably seated in the uterus; and although the uterine veins are reported as apparently free from disease, I suspect they were not examined with sufficient care to render their sound condition certain. When first examined by Dr. Vandervoort, the uterus was seemingly much enlarged, and the uterine region tender to the touch. In fatal cases of phlegmasia dolens related by others, the veins of the uterus have been found inflamed, and the inflammation to have extended from them to the other vessels.

In comparing the pathological appearances observed in the preceding cases with those of similar cases related by others, I find that abscesses and other morbid appearances are not uncommon in other organs than such as I have noted, particularly in the liver and the spleen,* and even in the muscular substance of the heart.† The liver, it would seem, is more apt to be secondarily diseased after injuries of the head,‡ or of the viscera of the abdomen,§ than after any others. Dr. Nasse, of Bonn, estimates that abscesses of the lungs are to those of the liver as 11 to 3, and to those of both organs simultaneously, as 10 to 4.|| The secondary disturbances of the spleen and other viscera of the abdomen are still more rare than those of the liver. Inflammatory appearances within the brain are also occasionally mentioned. I have not observed them in connexion with phlebitis, if the following was not an example of this sort.

CASE IX.—On the 13th of March last I examined a man who had died in the Hospital on the day previous, in consequence of an operation for extirpating a tumour from his neck. The tumour lay behind the posterior edge of the sterno-cleido-mastoideus; no important vessel or nerve was wounded during the operation. After it, however, the patient soon became comatose, and survived only a few days.

In the examination, the former seat of the tumour was found to be a vast mass of disease, consisting mostly of crude purulent matter,

* Rose. *Medico-Chirurgical Transactions*, Vol. XIV.

† See a case related by Mr. Lawrence, and appended to Arnott's paper.

‡ See a collection of these cases, compiled by Arnott. *Loco Citato*, p. 75.

§ Cruveilhier.

|| *British and Foreign Quarterly Review* for April, 1837, (No. 7,) p. 504.

mixed in with the natural tissues and with coagulable lymph. The inner coats of the veins were not examined, but the tunica arachnoidea was one red sheet of inflammation, and there was considerable effusion into the ventricles. The lungs were in their natural condition. The viscera of the abdomen were not examined.

The capsules of the joints are also frequently found involved. In the first case I have alluded to this; but much more striking examples are recorded by others. In the second case related by Arnott, it followed inflammation of the veins, which was excited by puncturing the cephalic in blood-letting. After death, besides purulent matter in the veins and inflammatory appearances within the brain, "the cavity of the knee-joint was filled with tolerably thick pus, of a uniformly reddish colour, as if from an intimate mixture of blood. The synovial membrane was thickened, with an irregular and almost villous surface; it was extremely vascular in its whole extent. The cartilages covering the femur and tibia had undergone considerable absorption, so that the convexities of the femoral condyles and the corresponding excavations of the tibia were completely bare. The cellular substance covering the capsule of the knee under the extensor muscles was inflamed, thickened, and loaded with pus, &c."^{*}

Pathological Deductions.—Before attempting to compare the facts of the cases now given with the theories advanced on the subject of secondary abscess, let us examine our data in a more contracted view; and, without touching any theory, draw what deductions we can from them.

1st. From the foregoing statements, we have seen that injuries and surgical operations, not dangerous in themselves, may be followed by severe, and even fatal, secondary affections in distant parts of the body, and in organs essential to life; and that the pathological states, thus induced, are not necessarily connected with a previous external injury, inasmuch as they may be induced, independent of such injury, by disease arising spontaneously in the system. The case number one is sufficient to substantiate the latter part of this observation. The fact has also been admitted by others. "Such secondary formations in internal organs," says Nasse, "may be equally the result of spontaneous suppuration in external parts, the more readily if the latter have its seat in the veins."[†]

2nd. The most usual pathological appearances found after death in these cases are, depositions of purulent matter, inflammatory con-

* *Loco Citato*, p. 18.

† *British and Foreign Quarterly Review*, No. 7, for April, 1837, p. 502.

gestions, effusions of coagulable lymph, sero-purulent effusions, effusions of sanies or bloody serum, adhesions of contiguous surfaces, ulcerations and disorganizations of different structures, as of the eye, and of the tissues about the joints. The whole of these pathological conditions are not often found existing together; many of them, however, may concur in the same case, and the most characteristic of them are those noted at the first. The tissues within which these morbid changes are most common, are the cellular tissue, whether subcutaneous, parenchymatous, or intermuscular; the serous tissues, as of the thorax, the abdomen, and encephalon; the synovial membranes, the skin, the muscular texture; and, in one case, the mucous membrane of the colon was also found involved.

The organs most frequently affected are the lungs, the liver, the brain, the spleen, and the knee and shoulder joints; but almost any organ of the body may be the seat of these secondary disorders. They have been observed in the eye, within the cavity of the spinal column; in the walls of the heart, and in other parts.

3*d*. In all cases of the kind under consideration, in which thorough examination has been made, the inner coats of the veins in the neighbourhood of the primary injury, and in other parts of the system, have been found inflamed. In some cases the arteries too were found diseased; but inflammation of the inner coat of the arteries appears to have no necessary connexion with the other consecutive affections, the external diseases connected with it being of a different character. With respect to the veins, the case is different, for well characterized examples of pure phlebitis have been shown to be attended with secondary affections in all respects identical with those following operations and accidents; and the only reason why so many cases of secondary abscess, &c., are recorded with reference to the veins, is, that physicians hitherto have generally passed over these vessels without investigating their pathological condition. Without referring to the cases I have furnished, the immense number of facts related by Cruveilhier, Dance, Arnott, Breschet, Lee, and others, may be considered sufficient to have put this subject at rest.

4*th*. In cases of secondary abscess, and other consecutive disease connected with inflammation of the veins, generally, but not in every instance, purulent matter is found within the cavity of the diseased vessels. In case four, the inflamed veins, instead of containing pus, were filled with thick grumous blood; and in the case of John White, related by Mr. Travers,* the veins, although inflamed, presented no

* Cooper and Travers' *Surgical Essays*, Vol. I., p. 179, Philadelphia edition of 1821.

signs of purulent formation within their cavities. There is some reason to believe that in cases proving fatal during the adhesive stage of inflammation in the veins, or before the purulent matter has time to form in them, that pus is not so common in remote parts; and that the evidences of inflammation in these parts are more commonly such as usually precede the secretion of pus.* This remark, however, is not to be considered applicable to all cases. I have already given instances to which it could not apply. Arnott has stated that phlebitis may prove fatal without any secondary local affection. He might have been led to this observation from examples similar to those just mentioned, where no purulent matter is discovered. But it is questionable how far his statement can be substantiated; for, although pus is not found, other evidences of a secondary disease may exist, as inflammatory congestion, the effusion of lymph, serous or sanguineous effusions. At any rate, he has not substantiated his statement by cases, and it remains, therefore, to be proved.

5th. The purulent matter formed within the veins may be either blocked up by a barrier of lymph,† or exist in a free state,‡ without any such barrier to prevent it from entering into the circulation and contaminating the blood. But the secondary abscesses are known to occur, in connexion with phlebitis, whether the pus in the veins be free or circumscribed; and even when no purulent matter has been detected, either in the original wound itself, or within the veins leading from it. These remarks are abundantly supported by the facts of the cases already given, and should be remembered in considering the theories that have been advanced on the subject of secondary abscess.

6th. Purulent matter existing free within the cavity of the veins does not necessarily lead to the formation of secondary abscesses in the viscera.§

Cruveilhier has attempted to draw a broad distinction between the influence of purulent matter taken up by absorption, and that which enters the circulation in its natural state; for it is well established that vast deposits of pus may be taken up without affecting the system, while a small quantity, forming within the veins, may be attended with fatal consequences. But the distinction in this respect is not

* See Cruveilhier's Experiments, to be mentioned subsequently; also Hodgson on Inflammation of the Arteries and Veins, p. 555, for a case justifying this remark. Also the case of White, related by Travers; and that of Cule, by the same writer.

† See Case V

‡ See Cases VI and VII

§ See Case VI

worthy of the consideration he has attached to it. Whether the pus enters the circulation by absorption or by mixing directly with the blood, the consequences must be the same, so long as the general system is unimpaired, and especially while there is no disease at the time existing within the veins themselves. Pus in no inconsiderable quantity may be thrown into the circulation artificially, without producing any deleterious effects. The experiments of Nasse, in which he injected from two to three drachms of ill-conditioned pus into the jugular veins of dogs, had no injurious effect upon these animals; nor did he, on killing them, after the lapse of a few days, discover any morbid symptoms in any of their organs. With other physiologists the same kind of injections, repeated until they caused the animal's death, were found to have produced signs of inflammation in the heart, the lungs, and the intestines.* But the abundance of foreign matter in the latter examples, would be sufficient to account for the morbid effects; and it is probable, any other foreign substance, how mild soever in its nature, would, if thrown into the circulation, have the same effect. The difference, therefore, between the pus absorbed from abscesses, and that which is formed, without being circumscribed, within the veins themselves, is, with respect to their several effects upon the constitution, not owing to any modification which the former undergoes by being absorbed, but rather to the diseased condition of the vessels in which the latter is secreted.

7th. Let it, however, be remembered, that besides these secondary disorders connected with phlebitis, there are others occasionally resulting indirectly after operations, &c., of an entirely different description, and, so far as we are able to judge, in no way connected with disease of the veins. Under this head we may group such as may be manifested during the existence of high inflammatory excitement, and such as come on more slowly after the system has been much exhausted by protracted disease and hectic fever. Under both of these circumstances, the organ to become secondarily affected, may, in a measure, be determined by the derangement in the circulation and nervous influence of the part, by the increased or vicarious functions to which the general derangement may subject it, and, above all, by its previous disposition to disease. It is not uncommon for persons predisposed to phthisis, for example, to have this disease developed in consequence of the removal of a scrofulous limb; and this fact, of which we had an example in the hospital last winter, is now so well established, that it is laid down as a rule, not to operate on scrofulous limbs until, by

* British and Foreign Quarterly Review, No. VI. p. 501.

exploring the chest, we are pretty well assured the lungs are free from tubercular disease.*

CASE X.—William Cooper, a young Irishman, was admitted into the Hospital in the spring of 1836, with disease of the knee joint, excited by local injury, and involving most of the tissues about the joint, without affecting the bones or the synovial membrane. He remained under treatment about six months, without improvement. The discharge from the ulcerated surfaces and the tissues about the joint was inconsiderable, but the disease was obstinate, the constitutional disturbance very great, and the patient, in consequence, much exhausted. In the month of November or December the limb was amputated. After removing the local irritation, the patient for some time was improving in general health; but at the end of five or six weeks, the stump not having healed kindly, he began to cough, and to be troubled with purulent expectoration and night sweats; in a word, with all the symptoms of phthisis pulmonalis, of which he died about the first of May, 1837.

The following is an apt illustration of inflammation of the lungs induced by protracted disease of the knee joint, attended with hectic symptoms, and in which the vessels were not at all affected—one of those cases, in fact, where, without attending to post-mortem appearances, we might be led to think that no internal disease existed, and that the patient died from pure exhaustion.

CASE XI.—On the 6th of July, 1837, I made the *post-mortem* examination of a youth, about 17 years old, who died in the Hospital on the preceding evening. He had been under treatment for several months, with scrofulous inflammation of the right knee. The disease had opened externally, and the whole joint was deformed. Constant pressure from lying had produced ulceration of the soft parts around the sacrum, and this bone became extensively exposed. Superficial abscesses afterwards formed along the upper part of the left thigh, and the whole of this limb became oedematous; the ankle joint of this side much swelled, and twisted sidewise, apparently from relaxation of its ligaments. He had irritative fever, and gradually sunk without manifest disease in any vital organ; in short, the house surgeon informed me that the patient died of pure exhaustion.

I found the lower extremity of the right femur carious, the cartilages and the outer part of the bones beneath them ulcerated; the exposed surface of the latter being rough, soft, and easily broken down. The inside of the joint was one vast putrid abscess; the patella was pushed

* Cruveilhier, livraison IIme. p. 1re.

out of its natural position, and adhering by osseous union to the outer side of the external condyle of the femur, both bones about this union being in a carious state. The abscess of the joint did not extend beyond the crucial ligaments, but wound round the inner condyle to the posterior part of the femur, which was exposed for one-third of its length. The whole limb was infiltrated with serum. The blood-vessels leading from this diseased mass, as well as those of every part of the system examined, were perfectly healthy.

The right lung adhered firmly by cross-bands of lymph already organized to the parietes of the chest; the middle and lower lobes congested, and in a great measure hepatized, presenting spots of the appearance of red porphyry, others of gray hepatization; when cut, giving exit to blood, frothy mucus, and muco-purulent matter. An abscess, filled with reddish, thick bloody matter, existed under the middle lobe, and a similar appearance was observed in the interlobular space between the upper and middle lobe. The left pleura contained three or four ounces of bloody serum. An abscess, containing similar matter to that noticed in the right lung, lay immediately under the pleura at the side of the lower lobe; it had burst, and the cavity which had contained the matter was lined with a smooth, shining membrane. Heart, and the vessels attached to it, healthy; liver also free from disease.

The condition of the lungs in this case is a striking illustration of the insidious influence of external disease upon the vital organs. The affection of the lungs here was not the rapidly destructive inflammation connected with phlebitis; it was no doubt developed by the irritative fever, and its symptoms marked by those of the more painful malady of the external parts. I might here ask, do patients ever die of exhaustion from the long continued irritation of external disease without the developement of inflammatory action in some one or other of the vital organs?

Again: after primary operations on persons previously in vigorous health, it is not uncommon for severe inflammatory fever to ensue; and, under these circumstances, organs remote from the primary injury may take on inflammatory action. After severe scalds and burns, among the most frequent constitutional derangements, we have acute inflammation of the mucous membranes, particularly of the stomach, and of the air passages leading to the lungs. But the cases now referred to are not of the same character as those in which the veins are involved; the secondary inflammation being the result of general disturbance, and in itself not often so uncontrollably fatal as that connected with phlebitis.

Theoretical Considerations.—From what has now been said, it is evident that secondary depositions, and other pathological phenomena connected with them, are not in all cases, if indeed in any, simply the result of absorption and subsequent transposition of pus from a remote part of the system. Secondly, that inasmuch as these depositions occur in all parts of the body, without any definite relation to the part primarily affected, they cannot be attributed to any special sympathies between the parts first diseased and those affected afterwards. Thirdly, that the doctrine which imputes local violence to the part secondarily diseased, is without the shadow of truth. Fourthly, that the doctrine of constitutional irritation, as applied to the formation of secondary abscess, by not pointing out the manner in which the constitution becomes involved, and being in itself indefinite, gives us no real light as to the nature of the disorder. But if we are to infer from it, that the secondary disturbances are excited through the influence of the nervous system, instead of being merely a useless theory, it becomes absolutely an erroneous one. Lastly, that the doctrine which ascribes the secondary disorders to a vitiated condition of the blood, induced by the purulent matter, or other morbid exhalations of inflamed veins mixing with the blood, the contaminated fluid thus exciting local inflammation in the parts secondarily diseased, is the doctrine most conformable to facts; one against which, nevertheless, there are several serious objections, and it is therefore necessary to examine it with more attention.

The arguments in favour of this doctrine are, 1st, that in every case of secondary abscess, where thorough examination has been made, the veins have been found inflamed: 2nd, that phlebitis artificially induced, is attended with symptoms and post-mortem appearances identical with those under consideration: 3d, that mercury introduced into the veins, has been found imbedded in the different viscera, (as the lungs, the liver, &c.,) surrounded with portions of diseased tissue which presented all the grades of inflammation from simple sanguineous congestion to depositions of pus, and even tubercular matter: 4th, that in cases of adhesive inflammation of the veins, or of suppuration limited by barriers of lymph from entering the circulation, the secondary disorders are uncommon. It has even been said that they do not occur at all: but such is not the fact. The first argument of course does not apply to those cases of secondary disturbances connected with general inflammatory excitement or hectic fever already referred to. The proofs in favour of the second and third arguments are conclusive, and for the details of these I must refer to Cruveilhier. The fourth argument has been advanced without any qualification by this last

writer. I have, however, already given cases to which it cannot be applied, and I shall refer to it more fully hereafter.

The arguments against the doctrine in question, are, 1st, that purulent matter in its simple state, has not been proved to be an irritant capable of exciting inflammation in the sound tissue; and, 2nd, we have no proof of any other inflammatory secretion within the veins, excepting only coagulable lymph, which is itself one of the constituents of the blood in its healthy state, and therefore not at all likely to be an irritant capable of producing inflammation. 3d. But admitting, for the sake of argument, that these substances are capable of exciting inflammation on various surfaces in the course of the circulation, it is nevertheless certain, that such inflammation, in connexion with phlebitis, may be excited where the pus and lymph are blocked up or coagulated, so as not to be in a condition to enter the circulation. But again, to use Cruveilhier's own argument against himself, he has pretty well succeeded in showing that secondary abscesses depend upon phlebitis of the smallest branches of the veins, and even of the capillary veins in the organs, or parts of the organs, containing the abscesses. Now it is a point admitted in pathology, that inflammation occurring in any tissue, is more disposed to confine itself to that tissue than to spread to others; and that when it has shown itself in one portion of a given tissue, it is not uncommon for it to occur in a distant portion of the same, without any absolute communication. This we see every day in inflammation of the skin, of the mucous membranes, of the structures about the joints, in diseases of the arteries, of the periosteum, and even in diseases of the bones themselves. Admitting this to apply also to the inner coat of the veins, and we have a sufficient reason to account for the occurrence of secondary inflammation, without the necessity of purulent matter, or any other foreign substance, in the blood. Arnott, it is true, has shown that in fatal cases of phlebitis, the inflammation is not generally continuous from the diseased vessel to the heart. But this does not invalidate the argument under consideration: for it is not often that disease, running along any tissue, is absolutely continuous; on the skin we may have inflammation manifested in distant or distinct patches; so also on the mucous membrane; and so also in the arteries; thus, a patient may have a series of aneurisms, from disease of the inner lining of the vessels, at the arch of the aorta, in the common iliacs, and in each of the popliteals, with the tissue intervening between these several points entirely round.

Admitting the statement just advanced to be a true exposition of the pathology of these secondary disturbances, it then follows that the

first three arguments in favour of Arnott and Cruveilhier's doctrine, apply with equal and even greater force to this; and that the fourth, which, under just limitation, is but a dubious argument in their favour, is strongly corroborative of my view of the subject. For if inflammation can arise in the veins simply from the facts, that it is at the time existing in a different, or even distant part of the same tissue, and that disease has always a tendency to confine itself to the tissues in which it is already existing, how much the more likely will it be to take on diseased action when the blood circulating along it is no longer a healthy fluid, but mixed up with foreign matters, which, if not deleterious in themselves, become at least injurious by filling up the space which should naturally be occupied by unadulterated blood.

Another argument, and perhaps not the least in favour of the opinion now advanced, is that it is not necessarily opposed to the doctrine of simple deposition of pus from the blood, independent of local inflammation, as maintained by Velpeau and others; a doctrine essentially opposed to that of Cruveilhier and Arnott. In one of the cases related by Arnott himself, he acknowledges that "collections of matter formed *without pain* in different parts of the body, on both shoulders above the insertion of the deltoid muscles, over the sacrum, &c."* The case number one, I took, during its existence, to be one where purulent matter was thrown into the subcutaneous cellular tissue, independent of local inflammation there. But the particulars of the case might not have been noted with sufficient accuracy at the time, and I hesitate to advance it as a positive proof on this question. I am the more willing to speak thus hesitatingly, knowing that persons of cachectic habit, or in whom the vital energies have been much depressed, (as in the latter stages of putrid fevers, or in vitiated states of the fluids,) morbid action is developed with astonishing rapidity, often unattended by pain and without any general reaction of the system. In the latter stage of scarlatina maligna, for example, I have seen mere pressure of one knee upon the other, produce extensive ulceration of both surfaces; the patient, in the mean time, although sufficiently sensible to speak, apparently unconscious of this local disease, and giving no signs of suffering from it.

But the whole weight of the opinion I have advanced respecting these secondary abscesses, rests upon the statement of Cruveilhier, that they are the immediate result of local capillary phlebitis. Let us now see what proofs he gives in support of this; for if these are insufficient, the doctrine adduced from them must still be considered hypothetical.

* See his third case.

"Every foreign body," says he, "introduced in its natural state into the venous system, determines, when its eliminations by the emunctories is impossible, abscesses of the viscera in all respects similar to those which succeed to wounds and to surgical operations, and these abscesses are the result of a capillary phlebitis of these same viscera."* Without entering into the details of his experiments to show that these abscesses are connected with phlebitis of some of the larger vessels, or of the veins in the neighbourhood of the original injury, a fact which has been already shown, we will confine ourselves to the experiments he has advanced to show the existence of phlebitis in the organ in which the abscess is situated, and that the abscess is the result of it.

"If an irritating substance, ink for example, be injected into the femoral vein of a dog, from the upper towards the lower extremity, provided the collateral veins do not carry the liquid into the torrent of the circulation, in which case it would prove immediately fatal, at the end of thirty-six hours the diseased membrane is tumefied; and if the animal dies or is destroyed, an immense multitude of sanguineous or apoplectic spots (*foyers apoplectiques*) is found in the substance of the muscles and of the cellular tissue of the limb. The larger veins are distended with concrete and adherent blood, the *smaller veins corresponding to the apoplectic spots are equally full of concrete blood, while those corresponding to the sound parts are free.* If the animal survive the experiment, *collections of pus replace the apoplectic spots, and at the same time pus replaces the coagulated blood in the veins.*"

"A piece of wood was introduced into the femoral vein of a dog from its superior extremity as far as the hollow of the ham; and another piece, from below upwards, as far as the cava ascendens. The animal died on the sixth day with much oppression. The inferior extremity was infiltrated, and the infiltration had extended as far as the walls of the thorax. All the veins and venules of the inferior extremity were injected with pus. When the muscles were divided, *small collections of pus appeared here and there, which were the veins swelled with pus that could be pressed out from them with the greatest facility. Around these venules the muscular tissue was red, fragile, in a word, in that state which precedes suppuration. The sound veins always corresponding to parts of sound muscles, and the diseased veins conducted constantly to an indurated spot.* The femoral vein was transformed into a purulent canal, from which proceeded at the side of the sound branches, other branches filled with pus. The synovial membrane of the knee contained a purulent synovial fluid."*

After some desultory remarks upon these experiments, in which he attempts to show the influence of the venous system in controlling various functions, and to establish the hypothesis that phlebitis predominates in the whole of pathology, he comes to the following conclusions, viz:

* Anat. Patholog.—Livraison, 12mo., p. 4.

+ Loco Citat., p. 4.

“That visceral abscesses, and all the phlegmasiæ consequent upon wounds and great surgical operations, are the result of capillary phlebitis; and that this capillary phlebitis is itself the consequence of another which has its seat in some point of the venous system. That this capillary phlebitis presents always the same characters whatever may be the point of departure; thus, the capillary phlebitis consequent upon uterine phlebitis, that produced by blood-letting, the excision of varicose veins, an amputation, wounds of the head, and comminuted fractures, amidst innumerable varieties are so identical in their characteristic phenomena, that we may with all safety conclude from particular to general.” “I do not at all admit,” says he, “as Mr. Dance has thought fit to do, that the pus secreted in an inflamed vein, and transported into the organs, concurs directly of itself to this species of purulent degeneration. Pus once mixed with the blood is no longer pus, but rather an irritating substance. The rapidity of the formation of visceral abscesses, and the integrity of the neighbouring parts do not appear to be peremptory objections against inflammation; for forty-eight hours sometimes suffice for producing pus in an inflamed vein; and, on the other hand, the circumscription of the pus and the multitude of deposits, are admirably explained by the seat of inflammation in the capillaries.”*

Taking then the doctrine of capillary phlebitis for granted, the view that I have taken of the subject differs in no other respect from that of Cruveilhier, than in the necessity for the entrance of purulent matter into the circulation, in order, according to him, to contaminate the blood, and excite the secondary affection; a necessity upon which that author in no measured terms insists.

“The effects of adhesive phlebitis,” says he, “are purely local; and it is the same with phlebitis in a state of suppuration, when the pus is circumscribed by clots so as not to be able to penetrate in its natural state into the circulation.”† “How extensive soever the phlebitis may be,” he remarks in another place, “so long as the pus accumulated in the inflamed veins does not communicate with the circulation, nothing but local symptoms results from it. Thus pus may be absorbed as in every other purulent collection, (*foyer*) and eliminated in the ordinary way; it may distend the vein, produce thinning of its coats, and work itself outwards through the lacerated parietes; or abscesses may result from it, which an inattentive observer may confound with abscesses of ordinary character.”‡

Now in opposition to these statements, I may advance the case number four, in which though there was no pus in the inflamed vein, yet the lungs were studded with secondary abscesses; and the case number five, in which, though the pus in the veins leading from the stump was blocked up with lymph, yet the system became affected, and the lungs were extensively permeated with purulent matter, and gave other signs of local inflammation. It is clear, therefore, that

* *Loco Citat.*, p. 9.

† P. 11.

‡ P. 12.

Cruveilhier's theory on this point covers too much ground, and that if the secondary disease is really a capillary phlebitis, such phlebitis may occur under circumstances that preclude the possibility of the admission of purulent matter, in its natural state, into the circulation.

I do not, however, wish to maintain that such is often the case. On the contrary, I am persuaded both from reading and observation, that in the generality of cases pus does really enter the torrent of the blood. But I see no reason to doubt that matter, formed originally within the veins, may subsequently be thrown out of the circulation as any other foreign or useless substance, without exciting local inflammation in the parts upon which it is deposited. For it does not follow because capillary phlebitis leads to the local secretion of pus, that the existence of pus in any part is a proof of previous inflammation there. In the majority of instances, the secondary abscess is, beyond a doubt, connected with local inflammation; but where we see superficial collections appearing suddenly, without pain, heat or redness, in a word, without any other of the common signs of inflammation than mere tumefaction, we have good reason to believe that such matter has been deposited independent of inflammatory action; in short, that it is an exhalation from the contaminated blood, thrown into the cellular tissue in the same way that serum is thrown into the cells of this tissue in a healthy condition of the system; and that it may be taken as evidence of an effort on the part of the general economy, to unburthen the circulating fluid of a foreign substance, by depositing this substance in places in which it is not so likely to be injurious.

*Forms of Secondary Diseases.—1st, from General Derangement.—*We are now ready to come to something like a definite notion as to the nature of these secondary diseases. In attempting to reconcile some of the more plausible theories on this subject, we have seen that these diseases fall naturally under two distinct divisions. The first, to which we have merely alluded in the preceding discourse, are developed indirectly after injuries or operations, either in consequence of high inflammatory action and its attendant derangement of the circulation, or in consequence of protracted irritation with exhaustion and fever of a hectic character; the individual organ most liable to take on diseased action under either of these circumstances, depending either upon its previous disposition to disease, or upon the extra functions which it is called upon to execute.

*2nd. Depending on Traumatic Phlebitis.—*The second division, or those which have principally occupied our attention hitherto, are entirely different in their nature. They are in all cases connected with

phlebitis, and generally with suppuration within the cavity of the veins. The secondary abscesses in these cases, when of an inflammatory character, are the result of a capillary phlebitis, which is itself subsequent to the phlebitis of the larger vessels. But when these abscesses are not connected with local inflammation, they are simply the result of a deposition of purulent matter, formed originally within the diseased veins; this latter variety standing in nearly the same relation to the other, as abscess by congestion does to common phlegmon.

From what has now been shown we can have no hesitation in admitting traumatic phlebitis among the most alarming diseases that fall under the eye of the surgeon. I have heard it asked whether it is ever curable at all; a question, in truth, not far out of place; for the pathology of the veins has hitherto, by practitioners generally, been so little studied, and the principles of treatment so little understood, that the greatest number of the severer cases terminate fatally, or advance beyond all chance of recovery before the true character of the disease is even suspected.

Adhesive or Local Phlebitis.—There is, however, a milder form of phlebitis, perhaps a more common one, in which, although attended with excitement, the inflammatory fever never assumes a typhoid character, and the disease of the veins is either limited to adhesive inflammation, with closing of the caliber of the vessel, or, if it progress to suppuration in any part, the purulent matter is always circumscribed: the blood, in these cases, does not become contaminated, and the secondary derangements do not generally ensue. Cruveilhier, as I have before remarked, maintains that in this form, the system never becomes secondarily affected. But I have shown that the difference between this and the severer form is not an essential one. Still, it must be admitted, that when the primary phlebitis is of the character just stated, the secondary disorder is comparatively rare, and the patients commonly recover. The same relation appears to exist between these two forms of the disease, as existed between local erysipelas, in which the general system is not much if at all deranged, and that which comes on with typhoid symptoms, affecting different parts of the surface simultaneously, or spreading from place to place until it has covered the greater part of the body; and finally, after inducing inflammation of the brain, or some other vital organ, terminating fatally.

In illustration of the milder form of phlebitis, we may allude to phlegmasia dolens, a disease not often fatal, and the pathology of which, since the investigations of Davis and Lee of England, Bouillaud and Velpeau of France, is no longer a matter of dispute. But even this disease is occasionally attended with alarming and fatal conse-

quences; the case furnished me by Dr. Vandervoort is one of this kind. The following case is here in point, as illustrative, among other things, of the milder form of phlebitis and simulating phlegmasia dolens in the female.

CASE XII.—Peter Dolan, a sturdy young Irishman, aged about 20, was carrying a heavy stone on his shoulders, when slipping, and the stone falling on him, he fractured his right humerus near the upper part of the bone, and by the pressure of the stone, had the whole of the soft parts at the inner flexure of the right elbow, lacerated and laid open. He was immediately brought to the hospital (November 5th, 1836.) When admitted, reaction had not yet come on: no pulsation could be felt at the wrist of the injured arm: the forearm was turgid, purplish and cold: the wound was filled with coagulated blood, which was also impacted under the integuments and between the muscles. It was evident that the artery of the arm had been torn in two, if not also some of the principal veins. Under this state of things it was a question of some importance whether any attempt should be made to save the limb. The patient was a temperate man, with youth and a vigorous constitution in his favour; and after some deliberation Dr. Stevens resolved not to amputate. Much difficulty was experienced in discovering the lacerated artery. An incision of about two inches long was made at the inner edge of the biceps, and afterwards carried down to meet the laceration; and finally, after removing all the clotted blood, the vessel was found with its torn extremity projecting about an inch free into the wound, and its orifice closed with coagululum, so as not to allow any further hemorrhage. A ligature was put round the vessel, the wound filled with dry lint, and the arm secured by a splint at the seat of fracture. The elbow was then placed in a flexed position on a pillow, and subsequently kept flexed by a tin elbow splint.

The fracture united as readily as if there had been no complicating difficulty. Suppuration, in the course of a few days, became profuse in the wound; and to prevent it from burrowing about the joint, a counter opening was made between the olecranon and the inner condyle of the humerus. Pulsation had returned in the radial artery before the end of the month.

About two weeks after the accident, the patient observed for the first time that his left leg was swollen and painful: the pain was aggravated by moving the leg, and pressure on the groin could not be borne. There was no discoloration, but the whole limb was hotter than the other: did not pit on pressure, and had a hard brawny feel to the hand. The inguinal lymphatic glands were slightly enlarged. Various

embrocations were used without relief. Leeches were applied with partial benefit. During the whole progress of the case the constitutional symptoms were never very severe, although at first there was considerable inflammatory fever, which was kept down by abstinence and other antiphlogistic measures. At the end of two months, the wound having cicatrized, he began to use the arm; and at the end of eleven weeks he left the house, with his elbow still somewhat stiff, the arm as strong as it had ever been, and the swelling persisting in the leg and thigh.

I met this man accidentally on the 30th of May, 1837; he was then employed in attending masons. All the motions of the arm were perfect. The cicatrix at the elbow, about three inches long, running obliquely across the tendon of the biceps, but not involving it, terminated near the origin of the pronator teres, some of the fibres of which were probably involved in the injury. The small cicatrix left by the counter opening, troubled him considerably by pressing on the ulnar nerve, and causing pain along the forearm and at the terminations of the nerve in the little and ring fingers. The leg still swelled, and at times painful.

On the 28th of June last he called upon me for advice, stating that his leg was still as large as ever; that after standing for some hours it becomes very hard and large, and that at these times the veins of the lower part become full and prominent. He suffers pain about the hip and inner part of the thigh. The circumference of the diseased thigh I found to be two inches greater than the other: the calf of this leg was an inch and a half larger than the right.

In the early stage of the preceding case, much speculation was elicited as to the pathological condition of the limb. The general conclusion was, that the femoral vein was inflamed; and of the correctness of this conclusion, the continuance of the enlargement, the soreness and hardness of the limb, with the fulness of the lower veins of the leg, leave now no further doubt. This, then, is another example of phlebitis in a vessel remote from the primary injury; but the inflammation having been limited to the adhesive stage, in accordance with the views before stated, no secondary abscesses resulted from it, and the disease did not extend to the capillary veins in any part of the system.

The symptoms, in the progress of the following case, I am disposed to attribute to the ligatures applied to the superficial jugular, and to this mild form of phlebitis thus induced.

CASE XIII. In extirpating a large encysted tumour from the neck of a Welshman of temperate habits, good constitution, and about 26

years old, Dr. Mott was obliged to divide the superficial jugular vein. The operation was performed at the New York Hospital April 15, 1833. The vessel was secured by two threads, and divided between them. The operation was not a severe one, and no other vessel required to be secured. The integuments, after the removal of the tumour, were drawn together by interrupted sutures and adhesive straps, and the wound covered with lint, a compress, and roller. The patient remained comfortable for ten or twelve hours; his face then began to swell, and the neck was soon as large as before the operation; and before daylight on the following morning the swelling was so great as in some measure to impede respiration. At the end of twenty-four hours, the patient being under considerable excitement, the whole of the dressings were removed, and the edges of the wound slightly opened. About half an ounce only of serum escaped. There had been no hemorrhage, or extravasation of blood. The swelling was hard, and with a blush of redness on the surface, as if from approaching erysipelas. He was bled freely: a spirit wash, afterwards changed to a poultice, was applied to the neck; and internally he took half an ounce of the following mixture every hour, viz: aq. ammoniæ acetat. \overline{z} viij.; tart. ant. gr. ii.; tinct. opii acetat. \overline{z} i. M. A tent of lint was placed between the lips of the wound, so as to allow the serum to flow out freely, and a rigid antiphlogistic diet was enjoined.

On the following night he rested well; the tumefaction already began to subside. Some slight degree of erysipelatous inflammation lingered about the wound for three or four days longer, and then disappeared. On the 21st no unnatural fulness was observable, and on the 29th he was discharged cured.

The threatenings of erysipelas were here not sufficient to account for the sudden tumefaction; and it is worthy of remark that this disease is often found in connexion with phlebitis. In truth there appears to be some intimate relation between the two, but the nature and extent of this have not yet been determined. We have seen that erysipelas may give rise to phlebitis in its most alarming form; and that phlebitis, especially among the superficial veins, may be mistaken for phlegmonous erysipelas, and treated and described as such.

Etiology.—My object in commencing this paper having been rather to investigate the pathology, than to attempt an elaborate essay on the subject under consideration, I may be excused, I trust, from entering at present into a minute analysis of the causes, symptoms, and other details connected with these affections, the greater part of which may be gathered from the cases already given.

With respect to those secondary diseases arising after injuries, but

not connected with phlebitis, their pathology, symptoms and treatment, should be studied in connexion with the diseases of the individual organs secondarily involved. They are, in fact, the phlegmasiæ and specific disorders of these several organs, complicated with an external disturbance.

It is difficult to say in what class of patients traumatic phlebitis, and its train of secondary disorders, are most likely to be manifested. They are known to occur as well in the new born infant, and the adult previously in good health, as in the aged, the infirm, and those prostrated by long continued disease or vitiated habit. Breschet has alluded to cases, some on his own authority, others on that of Meckel and Osiander, in which secondary abscesses, &c. were found in connexion with phlebitis, excited in all probability by an improper mode of applying the ligature to the umbilical cord.* It is even questionable how far a vitiated atmosphere is connected with their development. The majority of cases have probably been observed within the

* "Amidst a great number of post-mortem examinations of infants that had died after a few days of existence," says he, "I have not unfrequently noticed among the organic lesions, inflammation of the umbilical vein extending from the navel to the liver; inflammation in the tissue of this organ, and finally in the inferior cava. Did this phlebitis, which in some cases appeared to have been the sole cause of death, depend on inflammation and suppuration of the umbilical cord at its insertion in the abdomen and on the mode of applying the ligature, or upon some other cause? This I am unable to answer. I am sure I have seen inflammation and suppuration of the umbilicus frequently result from constriction of the cord too near the body. We know that at a little distance from the abdomen the cord has an appearance distinct from what it offers at two or three inches from its insertion. Tied too near, the compression bears upon a cutaneous surface, sensible and frequently susceptible to be inflamed, while at a greater distance the cord is transparent, soft, and of a structure, in appearance, different from what it presents near the abdomen. This inflammation with redness, suppuration, the formation of false membranes, within the umbilical vein, the vena cava, the liver, the peritoneum, has been pointed out before me by several observers; but they have only seen a few times these accidents of which I have been a frequent witness. Meckel has seen in an infant almost immediately after birth, the occurrence of vomiting, colic, diarrhœa, jaundice, fever, and various nervous phenomena. He died on the tenth day after birth, and at the examination of the body, the peritoneum was found inflamed, and purulent effusion into the abdominal cavity. The branches of the vena portæ, and especially those of the umbilical vein, were very much tumefied, and their walls thickened; those of the umbilical vein and its first branches in the liver were coated with false membrane very adherent. Osiander has made known an analogous fact: the umbilical vein from the navel to the liver was full of yellow pus, and upon the body of another infant seven days old, Meckel discovered traces of peritonitis, the umbilical vein much inflamed and its walls coated internally with pus, and perforated by little ulcerations."—*De l'usage de la Médecine*, Vol. xvi., p. 100, article *Phlébite*.

wards of Hospitals, but this remark will apply to almost any other form of surgical disease. Still there may be something in an Hospital atmosphere likely to induce them in the same way, perhaps, as such an atmosphere tends to the developement and spread of erysipelas. But we must look rather to the nature and condition of the parts primarily injured, than to the habits of the patient; to his age, or to external circumstances, for the causes predisposing to these affections. And since we have seen that inflammation of the veins lies at the root of all of them, we are naturally led to think that injuries and operations involving these vessels, are more likely than any others to induce them. By referring to the cases on record, such will be found to be the fact.

John Hunter appears to have been the first, at least among the English writers, to point out some of the striking peculiarities of venous inflammation; but his paper on this subject did not lead at once to much practical purpose; for we find that Everard Home almost immediately afterwards recommends the application of ligatures to varicose veins for the cure of obstinate ulcers; a practice which was followed in many cases with the most disastrous results.* It may fairly be allowed that Hunter's paper on phlebitis, was the first step, and the unfortunate results of Home's practice the second, leading to the true pathology of secondary abscess. The two apparently distinct forms of disease were, nevertheless, not grouped together and treated as parts of one, until within a very little time; and the credit of demonstrating the connexion may be accorded to Arnott of England and to Cruveilhier and Dance of France.†

Symptomatology.—The period at which phlebitis may arise after a primary injury, is altogether indefinite; in some cases appearing to commence at once, and proceeding to a fatal termination in four or five days; in others not showing itself until the patient has been reduced by several weeks' or even months' illness. After it has once set in, however, unless it becomes circumscribed or limited to the adhesive stage, its progress is usually very rapid. The following is Arnott's summary of the symptoms of the secondary affections:

“Great restlessness and anxiety, prostration of strength and depression of spirits, sense of weight at the precordia, frequent sighing or rather moaning, with paroxysms of oppressed and hurried breathing, the patient at the same time being unable to refer his sufferings to any specific source. The common

* For one of the earliest of these unfortunate cases on record, see a paper by Mr. Oldknow in the *Edinburgh Med. and Surg. Journal*, Vol. V.

† The pathway was pretty well prepared for these writers by the labours of Abernethy, Hodgson, Travers, Davis, Carmichael, Rose and others.

symptoms of fever are present, the pulse is rapid, reaching sometimes to 130 or 140 in a minute, but is in other respects extremely variable. There is often sickness and violent vomiting, especially of bilious matter. Frequent and severe rigors almost invariably occur, sometimes to the number of three or four in the course of a few hours. The general irritability and deep anxiety of countenance increase, the manner is quick, and the look occasionally wild and distracted. When left to himself, the patient is apt to mutter incoherently, but on being directly addressed, is found clear and collected. The features are pinched, and the skin of the whole body becomes of a sallow, or even yellow colour.

“Under symptoms of increasing debility, and at a time when the local affection may appear to be in a great degree subsiding, secondary inflammations of violent character, and quickly terminating in effusion of pus or lymph, very frequently take place in situations remote from the original injury: the cellular substance, the joints and the eye have been affected, but it is more particularly under a rapidly developed attack of inflammation of the viscera of the chest that the fatal issue usually occurs. Whether this is observed or not, death is always preceded by symptoms of extreme exhaustion, such as those of a rapid feeble pulse, dry, brown or black tongue, teeth and lips covered with sordes, haggard countenance, low delirium, &c.”*

Diagnosis.—The diagnosis of these affections, especially in their early stage, and when the primary phlebitis has not arisen in a superficial vein, is unsatisfactory and obscure. They may be mistaken for common inflammatory fever, depending solely in the original wound, especially when the secondary inflammations, as they often do, assume a latent form. Thus, when the lungs become involved, the disease then may advance to an alarming extent without any manifest external symptoms; without pain, without cough, and with respiration by no means embarrassed in proportion to the extent of the malady. Nasse states that even the stethoscope is of no service in assisting our diagnosis in such cases.

They may be mistaken for local inflammations in distant parts in no way connected with the primary lesion. Cases are occasionally recorded of partial success after operations, but finally terminating fatally from accidental attacks of pneumonia, &c. I suspect that if many of these had been more closely observed, the reporters of them would have found a relation between the operation and the consecutive malady, closer than they imagined. Again, in persons of intemperate habits, when the symptoms set in soon after the receipt of injury, they may be mistaken for the approach of delirium tremens. Errors of this sort I am disposed to think not at all uncommon; and in most instances, likely to be of injury to the patient; for the treatment usually found most successful in the latter, although often employed

* *Loco Citat.* p. 52.

in the first stages of phlebitis, is the worst that could be devised. Finally, they may advance so insidiously as not to be observed until the secondary depositions about the joints, beneath the integuments, or in some internal part, declare the nature of the case; or until our observation of their existence is too late to be of service. But, as a general rule, when, after an injury or operation, we find the constitutional symptoms of too grave a nature to be accounted for, either by the known habits of the patient, by the extent or nature of the local injury, or by both of these together; and especially if the symptoms are rapidly assuming a typhoid character, with rapid feeble pulse, sallow skin, and low delirium, we should suspect the existence of traumatic phlebitis, with its approaching train of consequences, and form our indications accordingly.

Prophylactic Measures.—Aware, then, of the nature of the diseases under consideration; aware of the circumstances under which they are most likely to arise; of their danger, and of the difficulty of distinguishing them; it becomes the surgeon, before attempting any important operation, to consider not only the expediency of the measure for the cure of an existing disease, but also what is to be its effect upon the system; what are the diseases most likely to be afterwards developed; and among the rest, traumatic phlebitis, and the means best calculated for avoiding it, should claim his most serious attention.

With this view, when obliged to operate on parts involving large veins, he should endeavour, if possible, to let his incisions be made where such vessels are in a sound condition, and where the tissues surrounding them are also healthy; for healthy veins, when cut, usually close by the adhesive process, but when diseased the case is otherwise; and when they happen to be divided in the neighbourhood of abscesses or morbid tissues, the acrid and decomposing fluids there, entering the divided vessels, may excite inflammation on their inner surface. Such, probably, was the cause of phlebitis in Case V., in which there was a burrowing fetid abscess extending up the stump towards the groin, immediately in contact with the vein.

The next precaution against the occurrence of phlebitis, is to avoid, as far as possible, the application of ligatures to veins. There are, it is true, many cases in which the occurrence of phlebitis is not so much to be dreaded after tying the vein, as other accidents that may ensue from leaving the vessel open. In wounds of the jugular or subclavian vein, for instance, the admission of air into the open vessel, and thence on to the heart, might cause immediate death. Some other of the larger veins, too, may occasionally require a ligature to prevent a regurgitation of blood and arrest an existing hemorrhage. Finally,

it is questionable how far the preceding caution should govern us in cases where, although the vein is healthy, there is nevertheless purulent deposition, or a morbid state of parts immediately surrounding it. Under such circumstances perhaps the chance of phlebitis would be less from the application of the ligature than from the admission of morbid secretions within the open extremity of the vessel.

Cruveilhier is of opinion that phlebitis and its train of consequences are peculiarly apt to arise after operations involving the bones: and hence, that in such operations, more than usual precaution should be taken against these. His views on this point, however, are rather from theory than from observation: but be this as it may, in amputations, or other operations requiring the section of bone, we should so manage as to have a sufficient covering of soft parts, in order to provide, as far as possible, against inflammation in the bones themselves, or within their medullary cavities.

Treatment.—With respect to the treatment of secondary abscesses, and the inflammations, either in the viscera or elsewhere, connected with them, I have little or nothing to offer; for when these symptoms are once fairly established, the case is usually beyond the control of art; but the phlebitis that precedes them, if recognised in its early stage, may often be overcome.

We have seen that, after injuries, phlebitis may ensue at very different periods, and under very different states of the general system. Hence, although we have to meet it as an inflammatory affection, our indications for the treatment of it cannot always be the same. Occurring, as it often does, in cases where the system is worn out with profuse suppuration, or with the protracted irritation of severe external injury, and where the general reaction is out of all proportion to the extent and severity of the phlebitis, the chance of successful treatment is but trifling from the onset. Our indications here are rather to support the general system, to prevent local determinations towards the viscera, to preserve the functions of exhalation and secretion from the skin, from the lungs, the kidneys: in a word, rather to maintain in healthy action all those emunctories by which the blood can be preserved in its natural condition, and through which purulent matter, if it does enter the circulation, may be eliminated, than to attempt to subdue the inflammation of the veins by depletion.

But where the disease occurs immediately after the receipt of injury, or while general reaction yet runs high, and the vigour of the system is comparatively unbroken, our therapeutic measures must be more prompt and energetic. Under these conditions our indications are:—

1st. To resolve the venous inflammation; or, failing in this, to arrest it in its adhesive stage.

2nd. To moderate and equalize the circulation, so as to prevent an undue determination of blood to any of the important viscera.

3d. To remove every source of irritation; to allay nervous irritability; and after subduing or arresting the phlebitis, to support the strength, and restore all the functions of exhalation and secretion.

The therapeutic means for fulfilling these indications are but few, and every thing depends upon their timely application. So soon as we have reasonable evidence of approaching phlebitis, for the purpose of resolving or of arresting it in its adhesive stage, we should resort at once to free depletion, abstracting at the first sufficient blood to produce a permanent effect upon the circulation; and should reaction occur, with remaining symptoms of phlebitis, in a few hours after the first bleeding, we should resort to it again; or if the state of the system contra-indicate general blood-letting, we should resort to local depletion, to purgatives, to antimonial diaphoretics, and to such topical applications over the region of the inflamed vessels as are best calculated to arrest the progress of disease in the part, as poultices, anodyne and evaporating lotions; or even the application of a blister, where we have reason to believe that, as a revulsive agent, it may arrest the inflammation in the vein beneath it. The life of the patient often depends upon prompt and efficient action at the onset; a few days, sometimes even a few hours, will be sufficient for the formation of pus within the vessels and the developement of capillary phlebitis. Our depleting measures, therefore, should be carried to their ultimate before these conditions have time to ensue, and before the symptoms of the case assume an adynamic form.

The principal and almost only risk in treating the case thus energetically at first is, the possibility of having mistaken it for the nervous symptoms preceding an attack of delirium tremens. But the early hallucinations, the timorous and brooding look, the quivering tongue and trembling hand of this latter, are not among the earliest symptoms of phlebitis. The absence of these symptoms, the good effects of the first free bleeding, the inflammatory state of the blood itself, the inefficiency or ill-effects of opiates, and, above all, a knowledge of the habits of the patient, may be sufficient to guard us against this error. Yet should doubts still exist, it is better to resort to venesection than to trust to palliating measures; for the loss of blood in incipient attacks of delirium tremens is not often injurious, and when compared with the danger of neglected phlebitis, it is not to be held in consideration.

The chance of confounding this disease with the symptoms of common inflammatory fever depending on the local injury, or with distant inflammation altogether independent of the external wound, should have little or no influence on our treatment; the indications for overcoming these being nearly the same as those first called for in phlebitis. Owing to the occasional obscurity of the early symptoms, I am persuaded phlebitis is often treated as common inflammatory fever; and when the depletion is sufficiently active to overcome it, the case is passed over without note or comment. The error in this way is of some consequence, inasmuch as it prevents us from associating the unfortunate cases with the others, and from studying the earliest signs of the disease with accuracy.

The symptoms of the disease arrested or suspended by the means already stated, in order to provide against reaction and the recurrence of inflammatory signs, it becomes requisite to take such measures as will fulfil the second indication, viz: to moderate and equalize the circulation so as to prevent an undue determination of blood to any of the important viscera. The means for effecting these objects, of course must vary with the peculiarities of individual cases. Should the encephalon be the part most likely to suffer, local depletion, by leeching or cupping, cooling or evaporating lotions, counter-irritation, antimonials, and purgative medicine, may be advantageously employed. Should the viscera of the thorax be peculiarly exposed, with the exception of cooling or evaporating lotions, the same measures may be tried, and with the addition of opiates and other anodynes. Should any of the abdominal viscera be threatened with disturbance, the treatment here again must be such as would be demanded under ordinary circumstances. The peculiar irritability of the stomach, so often observed among the secondary symptoms, and which, in the case of James Hall, was met by porter and lime-water, might perhaps be more happily restrained by abstinence, and by leeches, sinapisms, or blisters to the epigastrium. The regimen of the patient should be of a character best adapted for carrying out the several indications. But the patient is not usually apt to harm himself by eating. There is an apathy towards food; and when the stomach is not goaded by tonics and excitants, there is no disposition to unnecessary indulgence in eating.

The inflammation of the veins now fairly under control, and the derangement in the circulation moderated, the chance of recurrence or extension of phlebitis is gradually lessened. Still, so long as the local injury that first gave rise to it exists, the more so if the wound be in the neighbourhood of large vessels and present an extensive

suppurating surface, the danger of the secondary results is not entirely obviated. And it is at this stage we are to bear in mind the particulars of our other indication, viz: to remove every source of irritation, to allay nervous irritability, to support the strength and restore all the functions of exhalation and secretion. With these views we are to attend to the state of the external wound itself; and when the energies of the system are observed to flag under profuse discharges or long continued irritation, we must resort to a more generous diet, to anodyne and tonic medicines.

When phlebitis presents itself in superficial veins, especially if circumscribed, it may advance to the suppurating stage, and spread slowly from point to point, presenting a chain of abscesses, and producing at first no great degree of constitutional disturbance. In such cases the best plan is to trust to local depletion, evaporating lotions, poultices, and, if observed early enough, the application of a blister, with spare diet, and such medicines only as are necessary to maintain the healthy functions of the system; but as soon as matter can be detected along the course of the diseased vessels, the abscesses should be freely opened. With respect to the expediency of pressure upon the limb for preventing the advance of venous inflammation towards the heart, as recommended by Hunter, some doubts may be entertained. It was first advised under an erroneous impression respecting the mode in which phlebitis proves fatal, and the practice itself would be a source of irritation to the patient.

But too often, in spite of all our efforts, the primary inflammation will advance, the secondary symptoms manifest themselves, and, as before stated, recovery at this period of the disease is scarcely to be expected. Still, if the secondary disturbance is yet in its inflammatory form, and without the purulent effusion, some faint hope may be indulged by following out the indications already laid down in relation to the severer forms of secondary disorder. As to tonics and stimulants, if they are ever useful in these secondary diseases at all, it is at the time when the general powers begin to fail, and no further hope is left in following out the rational indications without them. Yet in some of the cases that have fallen under my observation, the tonic and stimulating plan has been followed from the first; a plan, I am sure, conceived only in ignorance of the real nature of the disorder.

New York, September, 1837.

ART. IV. *Remarks on Stammering.* By EDWARD WARREN, M. D.,
of Boston, Massachusetts.

A physician who has had an opportunity of observing a chronic disease in his own person, may naturally be supposed better qualified to write upon that disease, than one whose attention has only been called to the matter he treats upon, in the common routine of practice. Lancisi, Corvisart, Bayle, Laennec, Floyer and Bree, were victims of the diseases upon which they have given us so much information. This consideration has led me to suppose I might perform a useful service in committing to paper some remarks, the result of my experience, upon the subject of Psellismus.

The obscurity which rests upon it, and the vague and conjectural manner in which most medical writers are content to treat it, is matter of much surprise. The hesitation and doubt, on the one hand, with which professional writers allude to it; and, on the other hand, the confidence with which the inventors of systems for its cure set forth their claims, are equally remarkable. It seems evident that the subject has obtained very little attention from physicians.

A desire is constantly expressed by reviewers and journalists, as well as by the profession at large, that persons who undertake to write upon impediments of speech, upon the organs of articulation, or upon the art of speaking, would throw more light upon the mechanism of the human voice. It is supposed that if this mechanism were well understood, the manner of correcting its defects would be rendered easy.

If our watch is out of order, if it will not keep time, if the hand will not move in accordance with the action of the spring, we must make ourselves acquainted with its intimate structure before we can rectify the defect.

This reasoning, but for one objection, would apply exactly to the human body—to the human voice. We must understand the machinery; we must know whether the defect is in the nerves, the arteries, the muscles, the skin, or the alimentary canal, before we can prescribe. There is only one thing wanting to make the analogy complete. This is, that however clearly we may make ourselves acquainted with the machinery, i. e. the anatomy and physiology of the human body, there is one thing we cannot understand. The spring is invisible—the manner in which it acts is unknown.

Whatever knowledge discoveries in anatomy and surgery may give us of the organs of speech, no light will be thrown upon the means of

remedying the impediment. Why? Simply because the organs may be perfect, and yet the speech defective. In the majority of stammerers there is no organic defect.

As well might we expect to cure an epileptic patient by explaining to him the nature of muscular power, informing him that the muscles are stimulated to contract through the medium of certain nerves; that these nerves may be traced to the spinal cord, and this to the brain. Here we have the whole machinery well known. Skin, muscle, bone, nerves, and blood-vessels, are all known; and, as far as we can see, are perfect. In ordinary cases, we will to move our hand, and our hand moves; and it does not move but by our will. The case with our patient is simply reversed; he wills to move his hand, and it does *not* move, or its motions are beyond his control.

It is the same with the stammerer. He wills to utter an articulate sound, but the sound does not come; *vox faucibus hæsit*. In other cases an inarticulate sound is produced, the actions of the facial muscles and the jaw are irregular and spasmodic, producing distortion of the features, while the emission of sound not being in accordance with, and consequently not modulated by, the action of the muscles of articulation, may even become a howl.

If I am asked how it can be proved that there is no defect in the organs of speech of the stammerer, I answer, because if you place him in certain circumstances, his speech will become perfectly free. Organic defects are known by the constancy of their symptoms. It is a well known fact that most, if not all, stammerers, can sing with ease. Most of them can read poetry fluently. Some are entirely free from their impediment when by themselves. They can speak or read aloud for hours when they know no one hears them, without the slightest hesitation or catch in their voice. Perhaps they can read or speak with more fluency than those who have no impediment; for those who are led by this defect to pay great attention to the means of acquiring a free and faultless mode of speech, will, when free from it, be better speakers than those whose attention has never been called to the subject of elocution. It is a fact, though but little noticed, except by teachers of elocution and those who have been led to observe particularly the conversation of others, that perfectly easy and fluent speech is rare; at least among the male part of society. A stammerer who is perfectly cured will be a better speaker than is generally met with, for all the means for overcoming stammering are adapted to produce fluent and faultless speech.

If stammerers, then, can, under certain circumstances, speak thus fluently, does it not prove that there is no defect in the organs. Were

stammering produced by a defect in the organs of articulation and voice, the subject would continue to stammer under all circumstances. The mere removal from an occupied to an unoccupied apartment would make no difference; it could not restore parts that were deficient, nor remove parts that were redundant.

That there are defects of speech produced by organic disease, I am well aware; but in general these may be ascertained by inspection of the organs. Thus, the removal of the tongue, the loss of teeth, hare-lip, and, above all, fissure of the palate, may produce imperfect or inarticulate utterance of the worst kind. These causes, however, do not produce stammering.

If there is, therefore, no organic defect,—if the patient can speak freely when alone, and if the mere presence of another person causes him to stammer,—does it not prove that his impediment is owing solely to mental causes; that his is a mental affection?

Stammering, however, is a complicated affection. It originates in weakness of the nervous system—in irregular action of the nerves. Afterwards, the fear of stammering causes a person to stammer; the organs of speech soon acquire a depraved habit: the nerves also are habituated to irregular action, as in chorea, and the habit may become difficult to eradicate, even if the mental cause is removed. We have, therefore, mental and physical causes united, in every degree of complication.

The mental emotion increases the effect produced by the vicious habit of the organs, and this habit increases the mental emotion. Thus, these two causes are constantly acting on each other and aggravating the disease. Some persons never allow the fear of stammering to prevent the expression of their thoughts; but others acquire habits of silence, and of thinking so much before they speak, that they lose the power of translating their thoughts readily into tangible words, if I may use the expression, and hence the want of command of language is added to their other difficulties. An habitual stammerer of this kind, if suddenly relieved from his impediment, will find almost as much difficulty from this want of command of words as he did before from his defect of utterance. There is also another difficulty, which is, that his attention being always divided between the words he has to utter, and the consideration how he is to utter them, his ideas become confused, and very probably he forgets the latter part of his sentence before he has uttered the first. If mental embarrassment of any kind, if want of a perfect coolness and knowledge of what he is to say, will make a good public speaker stammer, it may be understood in how much greater degree it will operate to increase a habit of stammering.

I may allude to another thing also, which gives a singular appearance to the conversation of the stammerer, even when he appears to speak with ease. This is, that without being perfectly aware of it himself, he is constantly considering before he speaks, whether the words he means to employ are easy to articulate; and he is constantly in search of easy words. Hence, he makes use of odd and *outrè* expressions; and as no two words are perfectly synonymous, the words he substitutes for those which would more perfectly express his meaning, and which are chosen in haste, and for no other reason than easy utterance, often sound odd, or convey a meaning very different from what he wishes. Although he may see that this is the case, yet exhausted by the effort he has already made, he does not attempt to correct the impression he has communicated. In this way he may very readily obtain the character of an idiot or an imbecile.

I have spoken of stammering as the result of derangement of the nervous system. It is so often said to be produced by imitation, that some further remarks on this head may be necessary. I cannot pretend to bring the numerical system to my aid—I cannot exactly say how many out of a hundred stammerers are of the sanguine or the athletic temperament, but this I will affirm, that having had ample opportunity of observing numbers of persons thus affected, I believe an athletic, sanguine, or a phlegmatic stammerer to be very rare. The affection occurs in persons of extreme susceptibility, whose constitutions would readily make them the subjects of hysteria or chorea. This nervous susceptibility may be caused by sickness in childhood. This is the remote cause.

One exciting cause may be this, that persons who are thus susceptible may be so readily carried away by strong feelings, that in the hurry and earnestness to express their ideas, they crowd their words so rapidly upon each other as to produce stammering. They are constantly the subjects of those ardent emotions, that are occasional causes of stammering in good speakers. This is not a place for me to discuss the connexion between thought and words, otherwise I might prove that the time required for the articulation of a single word, is sufficient for a long train of thought to pass through the mind. Now, the earnest endeavour to express thoughts as rapidly as they are conceived, will produce stammering. This is what we often witness in persons who are not stammerers.

Fear is often an exciting cause of stammering. A child of the constitutional susceptibility spoken of above, may be made a stammerer by bad treatment. If he is in constant awe of a brutal parent or master, this is a sufficient cause. In regard to imitation as a cause,

I believe it to be comparatively rare. From the known tendency of chorea and hysteria to be extended by imitation, we might imagine this to be a more frequent cause than it actually is.

It is not my present purpose to write a detailed or a systematic treatise upon impediments of speech: I design, merely, to offer a few hints upon a subject which appears to have been little investigated by medical men, and which is certainly very little understood.

An extract from a letter of Richard Cull, quoted in the *Medico-Chirurgical Review*, for October, 1836, may serve to give an idea of the present state of medical knowledge on this subject.

"It would be tedious to enumerate the various methods that ignorance, empiricism and imposture have, at various times, proposed for the cure of impediments of speech. From the farmer in Joe Miller, who made his son sing 'Daddy your house is on fire,' down to Mrs. Leigh, the lady in New York, who forces her disciples to keep the tongue against the teeth uninterruptedly for three days, the plans have been innumerable, the proposers confident, and the success, of course, immense. Yet, singular as it would seem, although each is perfectly successful, the one that follows is advanced expressly because no such thing as success can be obtained. How this paradoxical state of things may be explained we leave to others to determine."

Of Mrs. Leigh's system, and the above amusing misrepresentation of it, I will speak hereafter.

There are two different species of stammering, which I shall describe. The first is that in which the organs of articulation, the lips and tongue are concerned. In the second, the organs are not in fault, but the voice is wanting. The effort to speak is made, the lips and tongue move, but the voice will not come. A person who witnesses this attempt, will believe that the individual has spoken, and ask him to repeat what he has said. The two kinds are frequently united. Indeed, when the voice is not at the command of the patient, the violent efforts he makes to speak will produce convulsive motions of the features and distortion of the countenance. A habit will be formed by the nerves and muscles, and these irregular motions will afterward take place, even when the voice is under command. A paroxysm of stammering is truly formidable to witness. The countenance of the patient is horribly distorted, inarticulate and dissonant sounds issue from his mouth: he will tear his hair, stamp as if with rage, and practise all the gestures of a madman. Even in less violent cases, the whole nervous system is in intense agitation, every nerve in his body, to the ends of his fingers and his toes, seems to him to vibrate, like the strings of a harp, producing a sensation like that caused by the filing of a saw, and he feels a sense of suffocation at his chest. I may mention, incidently, that stammerers are said, in general, to have

narrow chests, and that their lungs have not free play. My experience as far as it goes, confirms this. A narrow chest also, is said to be one of the characteristics of the nervous temperament. I have seen some athletic stammerers, at least one or two, but the most I have seen belong to the nervous class.

The first species is what is properly called stammering, and consists in the simple repetition of the same sound over and over, attended with convulsive motions of the lips, tongue, and muscles of the face. This is infinitely more disagreeable, and apparently worse than the other. It is, however, much more readily cured. The second species is more purely dependent upon an affection of the mind than the first. I think it in general, if not always, is the result of the first species. The fear of stammering produces that embarrassment which causes the voice to fail, either by closing the glottis, or by causing the patient to inhale when he ought to exhale.

It is well known that singers, when embarrassed, are incapable of uttering a single note; their voice is gone. In the same manner, a speaker before a public assembly sometimes loses his voice; and the more anxious he is to speak—the greater exertion he makes—the more totally unable is he to bring forth a sound. The more powerful passions, also, such as grief, fear, anger, and even excessive joy, completely take away the power of utterance. They not only, in many cases, deprive the subject, of the power of distinct articulation, but even of the ability to produce a sound: the vocal passage is spasmodically closed. Thus a person is said to be choked with rage. The same passions, in a less degree, will produce the first species of stammering in persons whose ordinary utterance is fluent.

I may be asked, if singers are thus subject to loss of voice, why does not the same thing oftener occur in regard to speech? I answer, because singing is merely an accomplishment; it is acquired by study and effort; whereas speech is in general so early learnt, that it may be almost considered spontaneous. Men talk without previously considering in what manner they are to move their lips, where the voice is to come from, how the sound is to be produced, or what organs are to be set in motion. A man wills to move his arm, his arm moves; he wills to speak, and the words are uttered: one is as little the object of thought as the other. I may here remark, too, a curious fact; that it is impossible for a stammerer to stammer by design. Desire him to stammer; let him make the attempt, and he will speak as freely as any one. Of course I do not refer to those stammerers of the first species, the vicious habit of whose organs is so confirmed that

they can never articulate without stammering. This, however, is a rare case.

But let us alter the natural order of things. Suppose we could make speech as much a matter of education as singing. Let us take a young person of considerable susceptibility: impress upon his mind the idea that speech is a subject that requires great thought; that it is of vast importance for him to educate his voice and his organs of articulation; and very probably when you introduce him into company, his voice will utterly fail. I have already said that I believe an impediment of the second kind to be the sequel of the first. A child is afflicted with stammering, and the constant and unsuccessful efforts made to overcome the defect, produce so powerful an effect on his mind, that whenever he attempts to speak, the fear of stammering, the constant thought as to how he is to speak, the constant dread of failure, deprives him of voice. Parents may learn from this the extreme necessity which exists for caution in subjecting a child who stammers to a variety of methods for its relief. No trial should be made at home. An experienced person should be selected to make the trial. I mean the person, if any such can be found, who has had the greatest experience in the treatment of defects of speech: and if none such can be found, or if, after a reasonable length of time, the trial fails, none other should ever be made. And this caution should be kept in mind: that in subjecting the child to a course of treatment for the removal of the defect, you fix the matter so much in his mind, that if not relieved, it will be aggravated and confirmed.

But to return to the analogy of singing—we have then only to make speech as much a matter of education, as much an accomplishment as singing, and the performers will be as liable to loss of voice, when embarrassed, as singers. Of course there would be the same difference between the bold and confident and the diffident and reserved, in the one case as in the other. Many persons may find it difficult to conceive that they could, under any circumstances, be thus deprived of the power of speech. But these same bold speakers, if possessed of musical powers, would be equally bold singers.

It is well known that a single idea, constantly dwelt upon, produces madness: in like manner, the idea of the importance of correcting a bad habit of speech may be carried so far as to become a monomania. Thelwall, who has given, I think, a very accurate description of the varieties of impediments of speech, says that there are some forms which bear a close relation to mental derangement. This remark may be still further strengthened by the instances of those defects of articulation produced by blows on the head.

I have made a reference to Mr. Thelwall's letter, and also a quotation from Mr. Cull's. The latter alludes to the numerous methods of cure which have been represented by their authors as completely successful, and all of which seem to have failed. From the knowledge of the subject that Mr. Thelwall exhibits, I have no doubt of his ability in the cure of impediments of speech. I believe that there are now many persons who have devoted themselves to the observation and treatment of this defect, who are capable of curing it. One principal reason that many of the cures are not permanent is, that the teachers require too little time. A habit that has been confirmed by years cannot be eradicated in a few weeks. The best musical teachers now inform their pupils that the art of singing requires years of practice and instruction. In the same manner does it require years of practice under the direction of a competent instructor, for a stammerer to acquire the free use of speech. The same thing that occurs in other chronic diseases takes place in this. A patient applies to us for the cure of distorted spine. He is told that he cannot be cured under a year. After pursuing the proper course for three months, he finds himself very much benefitted. Having now acquired the habit of using the various machines with facility, and convinced that the means prescribed will complete his cure, he requests our permission to return into the country. The country air will be beneficial to him; he can carry his weights, his pulleys, his triangle, and all his other apparatus with him. He arrives at home, and amid the excitement of meeting his friends, and the exhilaration produced by their congratulations on his amendment, his exercises are neglected. A few days or a few weeks can make no difference; time passes, and the longer he neglects it the greater is his reluctance to resume the wearisome course he formerly pursued. By and by, he finds the disease once more making progress, and now very probably he loses confidence in his surgeon, and in the course he formerly thought so successful. It is the same in other chronic diseases. What physician is there who does not feel that the moment his inspection is removed, the rules he has laid down will probably be pursued with less energy than before? But ought this to bring discredit upon the physician, or upon the means employed? Certainly not.

The cure of impediments of speech is now much better understood, by those who have devoted themselves to their treatment, than it was twenty years ago, at least in this country. Mr. Thelwall's letter, and his *Results of Experience*, were published in London in 1810 and 1814, and although there can be no doubt that he performed the cures he describes, yet his book throws no light on the subject. Having

much experience of the methods formerly resorted to, and which were in fact merely experimental, I can affirm that many of them were more calculated to confirm than to eradicate the defect.

Despite of all the ridicule that has been cast upon Mrs. Leigh's system, by those who knew nothing about it, I believe the inventor of this system deserves the credit of the improvement. As it was at first taught empirically, the pupils being obliged to take an oath not to reveal the secret, many amusing misconceptions arose in regard to it; the pupils often purposely misleading those who subjected them to troublesome inquiries. Hence arose the brilliant discovery that was published in our daily papers at the time when it was taught in Boston by Mr. Wilson. I mean the discovery that the system consisted in obliging the pupils to keep their tongue in contact with their teeth three days in succession.

Mrs. Leigh's system exceeded all others in the marvellous rapidity with which the cures were wrought, and it was this very incredible rapidity that brought ridicule upon the system. Any thing that gives a system the appearance of the marvellous, is sufficient, in our day, to cause its rejection. Yet the phenomena of the human mind are no better understood than they were formerly. There is a practical disbelief with regard to the existence of mind, but still its action upon the body cannot be at all understood. We are every now and then meeting with instances of this action of the mind or the imagination upon the system which are, to all appearance, miraculous. But, to put the power of the imagination out of the question for the present, the apparent miraculousness of these cures disappears when the system is understood.

A deaf person may be made to hear instantaneously by giving him an ear trumpet; in like manner a person may be made to talk freely by telling him how to talk. I am well acquainted with a gentleman who formerly stammered as much as an individual could do, and in the way most disagreeable to witness. He was cured in half an hour. He required, it is true, superintendence for some time afterwards, but he was always a rapid speaker; and though he formerly stammered most furiously with lip and tongue, his defect never made him refrain from speaking. The consequence was, that the moment he was put in possession of a mode of speaking freely, his words flowed forth with the utmost volubility. Though it is now some years since his cure, his impediment has never returned: and neither in private or in company can any difficulty be observed in his utterance. Other patients were cured as rapidly, and in some cases the cure was permanent.

In many cases, however, the patient on his return home gradually relapsed into his former condition.

The* inventor of Mrs. Leigh's system, (for Mrs. Leigh was not the inventor) a medical gentleman of high talents and very strong natural powers, had a daughter afflicted with stammering. After attentive observation and long study of her case, he succeeded in hitting upon a method which effected a cure. This method was imparted to the young lady's instructress, Mrs. Leigh, an Englishwoman, in order that it might be pursued during school hours.

The inventor soon determined to extend its benefits to others. Finding Mrs. Leigh enter into the scheme with zeal and ability, he placed her at the head of the institution; and fearful of the reproach of empiricism, he chose it should pass under her name. Pupils soon flocked to them, they acquired experience and brought their system to perfection. The marvellous rapidity of the cures brought them immense numbers. It would not have seemed possible that what appears to be a rare defect should have proved to be shared by so many. They soon found it expedient to qualify other teachers, who established themselves in all parts of the union. Mr. Wilson, a very intelligent young man of unwearied industry, taught the system some time in Boston. The results here, as in New York, appeared wonderful; and if they were not permanent, the fault was in the short time allowed for the cure. The time Mr. Wilson fixed was six weeks, but many of the pupils believing themselves cured, remained not half that time.

Two great mistakes were undoubtedly committed. The first was, in attempting to make permanent cures in so short a time. The second was, in attempting to qualify so many teachers. Most of them, probably, believed that the possession of the secret was all that was requisite. They were not aware that years of observation and experience, a knowledge of elocution, a knowledge of the human mind and of human nature, were requisite to make them successful teachers. It is the same with this as with other diseases. If we had certain remedies for certain diseases—if for instance a certain dose of calomel would cure every case of fever, the science of medicine would be perfectly simple, and might be practised by a child. But the skilful physician adapts his remedies to the particular constitution of his patient, and to the greater or less developement of particular symptoms. It is symptoms he is called to combat, and the symptoms in no two cases are the same. Now the power to do this is only to be

* Dr. Christopher C. Yates, of New York.

acquired by attentive observation and experience. This remark applies with still greater force to impediments of speech. In the treatment of no other complaint is experience more essential than in this. I need not mention also, that unwearied industry and patience are requisite on the part of the teacher as well as on that of the pupil. This fact may afford some light as to the reason why a method successful in the hands of the inventor generally fails in the hands of others. No methods invented for the cure of stammering, have met with general success, because such methods are incommunicable, at least by writing. A successful teacher may be able to communicate his art to another of sufficient intelligence and industry, but it cannot be done at once, any more than a man ignorant of music can become qualified by a single lesson to teach music.

The gentleman who invented Mrs. Leigh's system was qualified for the purpose as few men can be. Not destitute of sufficient learning, he has yet little reliance on books, and depends upon observation, principally, for his sources of knowledge. Possessed of a tall and commanding figure, with an air of confidence and decision, he inspires his pupil at once with perfect confidence. He tells his patient *how* to speak; he tells him he *can* speak; and he *does* speak.

The effect of imparting their method to so many teachers, was soon apparent. The cures obtained were so numerous and wonderful, and attended with so much profit to the teachers, that multitudes of other persons soon set up to cure impediments of speech. It is not surprising, therefore, that the system soon fell into disrepute.

The inventor, at first, gave directions merely for the position of the tongue, but afterwards he made great improvement in his treatment. The suppression of the voice he believed to be caused by a spasmodic closure of the glottis, the same cause to which Dr. Arnott ascribes stammering.* The patient, in his violent and ill directed efforts to speak, closes the glottis, and hence the sound cannot escape. He makes motions with his lips and tongue, but the more violent his efforts, the more firmly is the glottis closed. The object of first importance, therefore, is to get the glottis open, the next is to keep it so.

The foundation of all rational systems taught for the relief of stammering, are based upon two well known facts. The first is, that slowness and deliberation are requisite for perfect speech. The second fact is, that stammerers can sing with great facility. In singing

* Dr. Arnott in his work on phrenology considers stammering in every case produced by spasmodic closure of the glottis. Dr. Yates holds the same opinion; and it is remarkable that as I believe to be the case, the opinion of each was formed from his own observation and was original with both.

the sound is continued from syllable to syllable, and word to word, more than in common speech; there is less emphasis, less interruption of sound. Hints have been taken from this fact, and various methods invented to prolong the sound in this manner, and prevent its interruption until the speaker arrives at the end of his sentence. So long as the stammerer can prolong the sound in this way, he can speak with ease; his great difficulty is in the commencement of a sentence and in avoiding interruption in breaking the sound into syllables.

An attention to the patient's manner of inspiration is, therefore, of importance. Instructions are given for inhaling with deliberation, and for husbanding the breath, so as to let it out no faster than is requisite for the formation of sound, and without panting or any sudden or spasmodic effort. Directions must also be given as to the particular manner in which each consonant is pronounced, and for the articulation of any particular words or sounds which are difficult to the pupil. These must be taught, and any vicious pronunciation corrected by precept and example. For this purpose, an acquaintance with the principles of elocution, and with elementary sounds, is requisite. It is by imitation only that the proper manner of uttering them is to be acquired, and the organs habituated to it.

Mr. King, the teacher of elocution, who gave lessons in Boston in 1835, for the cure of stammering, was well qualified in this respect from his knowledge of elocution, in which he was an able instructor. This, and his experience in the treatement of impediments of speech, rendered him a very competent teacher. I believe his method to be adequate to the cure, if pursued with sufficient attention and perseverance, and for sufficient time. Mr. King's system requires more labour on the part both of teacher and pupil than Mrs. Leigh's. He aims less at producing rapid and striking results. But he puts into the hands of his pupils certain rules, which, when they have attained proficiency in them by imitation and practice, will enable them to cure themselves with perfect certainty, if they are not wanting in perseverance. In this respect, the system is more tangible than Mrs. Leigh's. It is more capable of being continued after the pupil is deprived of the aid and superintendence of the teacher. Mr. King assigned one year as the shortest time in which the defect can be eradicated. He did not, however, require that the pupil should remain all this time under his inspection.

According to Mrs. Leigh's system, the pupil was kept in the house of the instructor, so as to be under his eye during nearly the whole time; so that he was made conversant with the method in less time than by Mr. King's course, who gave lessons of one hour a day. Now

it will be much better for the pupil, especially if an adult, to receive instruction for an hour a day for a year, than to be with the instructor the whole time for a fortnight. For children, the best plan would be for them to be with the instructor all the time during two, four, or six weeks, according to circumstances, and afterwards receive an hour's instruction daily for a year. Of course it is not to be expected that this hour daily will be sufficient; the pupil must practice by himself several hours, and he will do this more regularly while he continues to take lessons, and will also avoid errors in his practice which an individual, whether child or adult, will insensibly fall into, if left entirely to himself.

Dr. McCormac, of Edinburgh, published a treatise on the cure of stammering in 1828. The following quotation, from his preface, appears on his title page.

"I can assure all, that by the most ordinary attention to the following pages, they may of themselves remove, with the utmost ease and facility, and in a very short space of time, the most inveterate and confirmed habits of stuttering, no matter of how many years duration or when contracted."

This is being pretty confident. Dr. McCormac's observations, however, do not appear to be the results of experience; his treatise has never obtained much attention, and I do not know that since he published it, he has ever added or improved what was then mere theory. If he had tested it, by devoting himself to the cure of stammering, it is highly probable he would have become very successful. Experience would have led him to modify his theory very essentially. As it is, his treatise fails in the object aimed at, because defects of speech cannot be cured by a book. We cannot learn to sing from a book, neither can we learn to speak. A stammerer learning to speak is exactly in the position of a person learning to sing. A singing master can teach a pupil of sufficient industry to sing, and a person experienced in the treatment of impediments of speech can teach his pupil to speak freely and well, provided sufficient time and pains be taken.

It seems that, while travelling in America some years since, Dr. McCormac's attention was attracted by the well confirmed success of Mrs. Leigh's system, which was then taught under oath of secrecy at New York.

The desire that results so beneficial should be placed within the reach of every one, led him to reflect much upon the causes of stammering, and he finally came to the conclusion that the "proximate cause in most cases arises from the patient endeavouring to utter words, or any other manifestation of voice, when the air in the lungs is exhausted, and they are in a state of collapse, or nearly

so." This is the discovery upon which he rests his claim, and this is the foundation of his system. But, if what I have said above be true, it will be seen that this is only one form of stammering. The vicious habit of the articulating organs may exist independently of any deficiency of voice. Dr. M'Cormac's directions for inhaling, if practised upon, are more likely to lead the patient astray and to confirm a bad habit of inhalation, or produce one equally bad, than to remedy the difficulty. Without doubt an attention to the manner of inhalation, where the voice is in fault, is of the first importance; means must be taken to keep the air passages open, and to prevent any attempt at speech with the lungs in a state of collapse. If the person attempts utterance by inspiration instead of expiration, he will succeed only in producing with great difficulty a monosyllable, and the effort will be attended with great exhaustion. I do not see that it makes much difference whether we describe this as an attempt to speak with the lungs collapsed, or with the glottis spasmodically closed. The simple fact is, that the breath is not expired at the proper moment to produce articulate sound, and it is emitted in irregular jets. The patient must therefore be taught to respire slowly, regularly, and without effort. Dr. M'Cormac says also, and truly, that the patient having acquired a vicious habit of utterance, he must be carried back to the beginning, and taught to speak entirely over again. Unfortunately, he has not only to learn to speak anew, but he has to unlearn a bad habit of speaking. Herein is the almost absolute necessity of a teacher, or at least an assistant. The vowel sounds are generally uttered without difficulty by the stammerer; they come from the throat without any action of the muscles of articulation, and hence they come out with ease. The difficulty is with the consonants. It is therefore necessary for the stammerer to have some one with him to remind him of every vicious attempt at speech, and to show him by example how the sounds are articulated, the position of the organs, etc. This is to be learnt only by imitation. Now this practice is to be continued until the bad habit is corrected and the new one formed. Nor is the patient safe then. Until the new habit of utterance is confirmed by time, the patient is constantly in danger of a relapse. A study of the proper manner of pronouncing the elementary sounds, and an attentive observation of the defects of speech, are absolutely necessary for the teacher.

It is not my intention, however, to give a detailed account of the different methods proposed for the treatment of impediments of speech. From what I have already said, it will be seen, that I consider it in a great measure a mental disease; perhaps I might call it a monomania.

Whatever may be the case in children, I believe it seldom continues in adults, unless kept up by mental causes. Moral remedies, therefore, are of the first importance.

It may not, however, be uninteresting to glance briefly at some of the methods formerly employed.

The best known and the most ancient of these is the Demosthenic. We are told that Demosthenes, among other means for the removal of his defective utterance, adopted the plan of speaking with pebbles in his mouth. The sanction of a great name, the well known celebrity that Demosthenes acquired as an orator, rendered this method popular. It has, therefore, been much resorted to for the cure of stammering, and various modifications have been invented. The use of pebbles, or a small piece of money held over or under the tongue, or a pea held in the mouth,—have been devised, and stammerers subjected to these processes in the course of the various experiments made upon them. M. Itard invented a platina or gold plate for this purpose, which being forked and adapted to retain its position under the tongue, could be held more conveniently than the pebbles. Now we have no account of the particular species of impediment with which the Grecian orator was afflicted. There is no doubt, however, that either he or his preceptor in elocution adopted the use of pebbles for the correction of some particular vice of utterance, probably in the motions of the tongue. Now it is to be recollected, as I have already stated, that the want of command over the voice, or over the organs of articulation, occasions violent and convulsive motions of all or particular organs in different persons, so that the most opposite effects are produced. Thus, some attempt to speak with their mouths stretched convulsively open, others with them spasmodically closed; some have improper habits of moving the lips; others of moving the tongue. Now, to attempt to cure a defect which does not exist, will produce the opposite defect, and even a plan wisely devised to remedy one vice, if it be persevered in after it is removed, will produce the opposite. For instance, if a stammerer who attempts to speak has his attention directed to keeping his mouth open, he will be likely, if not watched, to acquire the habit of attempting to speak with the mouth spasmodically open.

One method which I have known employed for the cure of stammering, was that of directing the pupil to press his lips firmly together, and dwell for some time upon the consonants, which he was directed to pronounce with force. This was undoubtedly devised with the idea of giving strength to weak parts: but there could not be a better plan to produce stammering, or to confirm it if it already existed.

Some stammerers are said to have been cured by learning to speak a foreign language. As the pupil in this case is required to take lessons in pronunciation, and to speak the words after his instructor, until he obtains the right sound and accent, we can easily understand how the effect is produced. If the pupil is so far interested and engaged in the acquisition of a new tongue, as to forget his impediment, he may be cured in this way; but if sensitiveness predominate, the embarrassment of endeavouring to express himself intelligibly and grammatically in a strange tongue, is added to his habitual embarrassment, and increases the difficulty in a tenfold degree.

Some instructors of schools have cured stammerers placed under their care, by calling to them the moment they begin to stammer, and obliging them to stop and commence their sentence anew. Here the same remark applies as before. The sensitive stammerer becomes confused at being thus spoken to; he forgets what he has to say, and is besides in a constant tremor for fear he shall be thus interrupted; and hence his liability to hesitate is increased.

The practice of slow and loud reading, has been generally recommended. Of the utility of this, there can be no doubt; but the attention should be directed as little as possible to the impediment.

Dr. John Bostock published in the 16th vol. of the *Medico-Chirurgical Transactions*, an account of stammering in a plethoric subject; cured by the use of cathartics continued for eight years. The patient was a child of two or three years old when this defect of speech suddenly commenced. The effect of a cathartic was almost immediately perceptible. From the account of the case, however, it is evident, that it was more purely a disease of the nervous system, and more closely allied to chorea, than stammering usually is, and the strict diet enforced, was of more importance than the cathartics.

Learning to sing, has also been generally recommended. This must be highly beneficial, provided the sensitiveness of the pupil do not interfere here again. He must be taught to sing as an amusement merely. If he learns it as an accomplishment or as a means of cure, his voice will be liable to fail him.

Most of the methods which individuals have devised for their own cure, apply to the correction of particular defects, and should no more be used indiscriminately than calomel or venesection in every case of fever. One observation may, however, be made here, which is, that where there is not a great degree of sensitiveness, and where the patient has not already been subjected to previous experiments for his relief, any one of them may succeed merely through its influence

on the imagination; or from drawing the patient's attention to the practice of the method, and diverting it from his impediment. Experiments, however, should never be made: if they do not remove, they will confirm the defect.

Having thus glanced at several of the methods of treatment proposed, I come now to the consideration of the course I judge most beneficial.

I may be asked, if I maintain the importance of an experienced teacher: can parents who have children thus afflicted, do nothing themselves? I answer that they may do almost every thing. With children, almost every thing can be done by moral treatment; and according to the moral management they meet with, will the disease be confirmed or eradicated. The subjects are generally children of extreme nervous susceptibility and of feeble constitutions. The ordinary means for producing vigour and robustness, and for strengthening the nervous system must be resorted to. The muscular system must be developed as far as possible. If the chest is narrow and contracted, every means must be employed of bringing into action the muscles of the arms and chest. For this purpose gymnastic exercises, the use of dumb bells, and various sports may be recommended. In this way, a great deal may be done to produce fulness of the chest. The child may be encouraged in the practice of these exercises as a means of acquiring physical strength, without his attention being called to his defect of speech.

As soon as he is capable of reasoning, let him be driven as much as possible into the society of other children. If his defect is laughed at, let him be habituated to bear ridicule without flinching: let him be taught that those whose feelings allow them to ridicule defects or deformities, are much more worthy of pity than the subjects of those deformities. Let him be carried to the abodes of the deaf and dumb; teach him how much happier he is than they, how great a blessing he enjoys in the use of speech, even if his speech is imperfect. Carry him also into the presence of the blind, the lame, and the deformed. Let him be familiar with the sight of those who are greater sufferers than he.

If you pursue an opposite course—if, because he is sensitive to the ridicule of other children, you let him remain at home, if you impress upon his mind the idea that he has a defect which *must* be removed, and which will be an insuperable bar to his progress in life, unless it is removed; if you allow him to perceive your constant anxiety for his cure, he will get the idea that there is something pecu-

liar in his case—that he is marked out from mankind, as if the seal of Cain were set upon his brow; and that until he is freed from his curse, he can never associate with his fellows without shame.

On the contrary, you should direct your principal attention to convince him that his fate is not an uncommon one; that defects and diseases are the common lot, and assigned for wise purposes. In as far as you direct his attention to his defect at all, let it be with this object—to convince him that it is not an evil. Teach him resignation to the will of God. Impress upon his mind above all things, that he is under the constant protection of a being who knew what was best for him, and who has placed him in the condition and under the circumstances best adapted for his welfare. Priestly attributes the greatest blessings he enjoyed to his impediment of speech; and others may in like manner trace to the same cause, their preservation from much evil, and their possession of much happiness. Our greatest felicity is often produced by what we regard at the time as our greatest misfortunes.

When he begins to feel the importance of a free use of speech (and he may feel the importance of it without being morbidly sensitive on the subject,) and disposed to enter upon a laborious course of discipline, seek out a person who has experience in the treatment of impediments of speech. Place him under his care, and if he is benefitted, do not remove him and think to perfect the cure yourself. Recollect if one of your other children is learning to sing, you would not think of taking the task of instructor upon yourself, as soon as he had made progress. Three months is a very short time for him to remain under the superintendence of an instructor; six months is better, and where it is practicable he should remain a year. If this interferes with his other studies, it is of no consequence. He will derive benefit enough to compensate for the loss. The age I would fix upon for this trial, should be from eight to twelve. Some children, however, are as mature at the former age as others at the latter. At this period, the loss of a year's study may perchance be a gain. To a child of nervous habits, the time allowed from his instruction in speaking, may be much better employed in acquiring health and vigour, by play and exercise, than in study. But if the child is not disposed to enter into this course, if he is irritable and indocile, and regards it merely as an irksome task, it will be better to wait till a more advanced age shall convince him of its importance. Otherwise we run the risk of increasing his irritability and sensitiveness.

Should this attempt fail, none other ever ought to be made. The child should be engaged in active pursuits, and induced to be in

society as much as possible. If his excessive mental susceptibility leads you into the belief that he has superior powers of mind, do not fall into the mistake of thinking that these mental powers must be cultivated. For in so doing, you are increasing his susceptibility, and rendering him miserable. The more ambitious he becomes of mental distinction, the more keen will be his sense of the defect that renders him incapable of displaying his talents and acquirements to advantage. He should be led to look forward to an active—not a literary life. He will be happier as a carpenter than as a professional man. But without resorting to a trade, there are employments enough in which he may gain wealth, and honour, (in our days we place wealth first,) and in which his impediments will be no obstacle to his success.

In very few cases, however, if the course of moral treatment I have recommended were pursued, would the complaint continue. In most cases, the moment you reconciled the mind of the patient to his defect, the moment you relieved him from the fear of stammering, he would speak freely. This is confirmed by the cases above mentioned of rapid cures produced by Mrs. Leigh's system. The patients came to the instructor fully impressed with the wonderful cures they had heard of. The appearance of the latter, his manner and voice confirmed the impression, and when he told them they could speak, they believed him, and spoke without fear, and therefore without impediment. The mere lip and tongue stammering of children is readily cured, if the mind do not share in the disease. As they grow older they are generally capable of curing themselves. We often meet with adults who were stammerers when children, but who cured themselves, or outgrew the disease as they acquired strength. On the other hand, adult stammerers are comparatively rare. Still more readily can the defect be removed in such cases by experienced instructors.

Moral management is, therefore, all important. In most cases it will alone be sufficient to effect a cure; and in cases where it does not, it will render the cure easy to a competent instructor. I would again urge the impropriety of subjecting the patient to a new trial if the first fails. I would urge most strenuously the necessity of leading him to the choice of that pursuit in which his defect shall afford the smallest obstacle to his progress. He is to be taught to look upon it as a necessary evil, and to shape his course accordingly. He is not to be led to bear it in his mind as the prime obstacle to his success, which must be removed before he can be happy. The molehill is thus magnified into a mountain. Whatever side he looks upon, his impediment rises up before him, shutting him out from the road to distinction. It

comes to occupy so large a share of his attention that he becomes a monomaniac: on this subject, he is actually insane: there is this little diseased spot in his mind: fortunate will it be for him if it does not affect the whole; if the gangrene do not extend over all his feelings.

The characters of Lord Byron and Sir Walter Scott afford a striking illustration of the power of education to modify the effect of natural or early acquired defects, or deformities, upon the disposition. Both were the subjects of physical defects. Byron, the victim of a bad education, had been the object of various attempts to relieve this defect. This and his exposure to taunts upon the subject, fixed it in his mind, and produced a sensitiveness akin to madness. Throughout his whole life he evinces strong marks of natural benevolence and philanthropy, but he believed himself marked out from mankind, and his very best feelings turned to bitterness and misanthropy. Scott, on the contrary, whose education was very different, was rendered by his defect a more social being; more ready to enter into the feelings of those around him. It called forth his sympathy for the troubles of others. Scott was taught to bear his defect with resignation, as a necessary evil: Byron to look upon his as a disgrace which must be removed. Had Byron's feelings been soothed instead of being irritated; had he been made to witness the diseases and deformities of others, and taught how many of the same rank in life were greater sufferers than he, we might have witnessed in him all the ardour of a philanthropist. Few persons, I believe, understand how nearly philanthropy and misanthropy border on each other. The same keen sensibility, rightly directed, gives birth to the one, and wrongly directed, to the other.

"The keenest pangs the guilty find
Are triumph to that dreary void,
That leafless desert of the mind,
The waste of feelings unemployed."

It is said that Howard, if he could not have given vent to his feelings in action, would have been a madman. I will add he would at least have been a misanthrope. Strong feelings unemployed will turn to bitterness.

To the person whose age renders him the director of his own course, I would give the same directions. The same rules that must guide parents in the management of children, should guide him in the work of self education. The first work the stammerer has to accomplish is the regulation of his mind; the acquisition of perfect self command and of mental calmness. When this is done, the rest is easy. Until it is done, it is in vain for him to attempt by physical means to over-

come his defect of utterance. The first embarrassment he meets with may cause its return. When he has brought himself to feel his impediment less keenly; to be less morbidly susceptible on the subject; then, if he is not already cured, let him apply to a person experienced in the treatment of stammering. If he meets, there, others who are afflicted as he is, it is all the better; he will no longer look upon his case as a peculiar one; and if he sees others whose impediments are worse than his, it will give him additional courage.

But great labour and perseverance are necessary in the employment of the physical means, in overcoming the perverse habits of the organs, and training them to articulate correctly. I would advise him, if it be possible, to pursue the method in the place of his usual residence, and while he continues his ordinary employments. An individual may leave his customary abode and pursuits, and go to a neighbouring town or city for his cure. His ordinary trains of association will be broken off, and the new mode of speech will be more readily adopted while he remains absent. But the moment he returns; the moment he resumes his former avocations, and is subjected to his customary objects of anxiety, his former mode of speech returns. This difficulty, indeed, is less in proportion to the length of time allowed for the cure to become confirmed; but were this even a year, still the cure will be less permanent than if made under the circumstances by which he must be ordinarily influenced. The remarks I have made as to the length of time required for the cure of children, apply still more forcibly to the case of adults. The more confirmed the habit, the longer the time requisite for its eradication.

Dietetic and medical means may sometimes be employed by the adult with advantage. If, as is most probably the case, the patient is of a nervous temperament, means must be adopted to strengthen the nervous system, and impart vigour to the frame. No one can doubt, that in stammering, the nervous system is always more or less in fault. Now, the disorderly action of the nerves is said to be the result either of entony or atony; of too much strength or of too much weakness. In the former case, spare diet and antiphlogistic measures are necessary; in the latter, a tonic regimen.

An attention to diet is extremely important. The patient has need of all his powers of mind in their greatest vigour and clearness. He must, therefore, cautiously avoid all stimulants, even meat, unless his health requires it. The excitement produced in the system by stimulants, disposes to mental lassitude, and unfits the subject for vigorous efforts of self-discipline. Animal food in like manner, has the same effect, though in a less degree. I would not, however, recommend

entire abstinence in all cases, from animal food, but only extreme moderation in diet in general, and particularly in regard to meat. This I recommend as calculated to qualify an individual for vigorous mental exertion and the possession of self command. The body must be mortified to bring it under subjection to the mind. Stimulants, moreover, excite the nervous system to irregular action. This is peculiarly the case with tobacco, and hence its use is improper. All excitement of mind or irritation of body must, in as far as is possible, be avoided or controlled. If a good speaker will stammer when under the influence of excitement, still more will an habitual stammerer.

There may be some cases in which the moderate and regular use of wine will be found beneficial; but these cases are rare, and in them the wine will be found to act as a sedative, not as a stimulant; not to produce excitement, but to check it by giving tone to the nervous system. Some persons, also, of nervous habit, may be rendered more excitable by abstinence; and their nervous system will be kept in best order by a simple but somewhat generous diet. In fine, the whole system must be kept cool by moderation, the bowels free, and every thing that excites the nervous system should be carefully avoided.

In regard to the discipline of the organs of speech, an experienced instructor, as I have repeatedly said, is of the utmost importance. Mrs. Leigh's system is still taught by its inventor in New York. That system will do all that physical instruction can do. Mr. King's system also, to which I have before referred, I also believe effectual. Mr. King I think now resides in Baltimore.

But if the patient cannot obtain such aid, what course is he to pursue? I am not sure, but what it would be best for him, to endeavour to banish the subject altogether from his mind. In regard to children, I have before alluded to the danger of subjecting them to experiments. With them it is far better, if a good teacher cannot be obtained, to attend only to the moral and physical discipline I have recommended, than to fix the idea of their defects on their minds, by trials, the results of which are altogether uncertain. A much fairer chance of relief is thus afforded them. There is one thing I might mention, which would be beneficial. Teachers of schools are apt to excuse pupils who stammer from exercises of reading and declamation; both from compassion to the unwillingness of the pupil to perform, and from the disagreeable effect on the hearers. But unless the impediment is of the worst description, it would be infinitely better for the pupil if he were induced to read and declaim with the others. It would be a useful exercise for him; it would strengthen his voice and overcome his fear of speaking before others. Besides, most stam-

merers can read and declaim better than they can converse. There ought to be no distinction of any kind made between the stammerer and other pupils.

For adults, the practice of reading aloud when alone, for two or three hours daily, and in the loudest possible tone, will be productive of the greatest advantage in strengthening their voice, and bringing it under their command. There is this benefit in this practice, that it does not keep the attention fixed upon the impediment. In the discipline of the organs, if they can obtain any one to assist them it will be all the better. They should habituate their organs to the pronunciation of those sounds which they find most difficult. The consonants alone, and in combination, will require most attention, and the pupil's friend must remind him when he is wrong. He should pronounce the difficult sounds for him, and let him see the way in which these are pronounced. The false motions of the tongue, lips, etc., must be corrected, and they must learn the proper position of these organs. Great care must be taken to keep the mouth well open, and to make no attempt to speak when the lips are too near together. The lips should never be forcibly compressed, they should but slightly touch, and immediately be brought apart as if with a rebound. Singers are instructed to keep their mouths constantly open, wide enough to admit two fingers between the teeth. Now, it is not meant of course, that they should not close their lips, because then it would be impossible to articulate: but only that they should commence with their mouths fairly open, touch the lips and teeth together only when required for the formation of labials and dentals, and instantaneously bring them back to the former position. This rule must be observed by the stammerer. He must separate his lips or teeth at the very instant they touch: and their resting place must be at some distance apart.

The pupil when he wishes to speak, must first place himself in a position perfectly easy and natural. The next thing is to open his mouth—for he cannot speak without his mouth is open. His third object is to obtain command of sound. The utterance of a vowel, or commencing a hum, will serve to open the glottis, and give him a command of voice. This should be done in a manner perfectly easy and natural, and without the least effort. If an effort is made, the patient draws in his breath, and the attempt at utterance takes place in this situation—with the breath stopped. Having the command of sound, he can speak freely. Hence the importance of attending to the method of inhalation. The gradual and gentle emission of sound should be practised. We have already seen that much benefit may

be derived from learning to sing. Besides, the peculiar mode of articulation in singing, singers learn to prolong a note to an almost indefinite extent. This practice will form an excellent exercise for the stammerer. Every public speaker might derive many valuable hints from the art of singing, and it is now allowed that any person may learn to sing, with sufficient time and pains. A musical ear is not so necessarily the gift of nature, as was formerly believed. If not possessed, it may be acquired. Therefore I recommend every stammerer to learn to sing. To return to inhalation: the patient must be very careful to avoid sudden and forcible attempts at inspiration and expiration. The air should be taken in without effort, and allowed to pass out in a slow and continued current. The practice of taking long breaths is beneficial, but these long breaths must be taken without effort, and without allowing any sound of respiration to be heard. The moment the lungs are expanded to such a degree as to produce inconvenience, inspiration must be stopped, and the moment expiration becomes painful, it should be carried no further. But by practice, the power of husbanding the breath, and prolonging the emission of sound, may be carried to a great extent. By the practice of filling the lungs, and carrying the expansion of the chest as far as it will go without effort and inconvenience, the expansibility and fulness of the chest may, in time, be much increased. It should always be done slowly, and without allowing the breath to be heard. The bad effect of inhaling with effort or carrying inhalation too far, is that a spasmodic action is induced, the air is expired in irregular and convulsive jets. By slow inhalation, the muscles do not become fatigued, but preserve their power to modify the emission of air. They are kept under the control of the will, and can be made to prevent the chest contracting too rapidly. A sentence should always be pronounced without interruption from taking breath. When the pupil first practices this, he can make short sentences, allowing himself places of rest where the sense will permit. But in a short time he will acquire the art of prolonging sound indefinitely: pronouncing the longest sentences without perceptible interruption from breathing. The air is taken into the lungs spontaneously, and the current of sound passes steadily on. The lungs are filled sufficiently between the imperceptible pauses in the emission of sound, for the purpose both of voice and of vital action.

In addition to these objects of attention; to wit, to place himself in an easy position, to keep his mouth well open, to obtain command of voice, the only remaining one is the management of the lips and tongue. On this I have already spoken sufficiently. He must acquire

this power by imitation where it is possible, and where it is not—where he cannot obtain assistance, he will find directions in books on elocution, for the articulation of the elementary sounds. His practice should be conducted before a glass.

The rapid results produced by the system called Mrs. Leigh's, I have said were real. They were made, and can be made as speedily as I have declared. But though the cures appear perfect for the time, until they are confirmed by long habit, there is great danger of a relapse. In a few cases, they will remain permanent, but in a majority, unless the course is persisted in, the difficulty returns. Moreover, if the affection is produced, as I have said, by mental causes, as long as those causes remain in the mind unchecked, they will be constantly acting to reproduce the disease. *Causa non sublata, non tollitur effectus.*

Liability to embarrassment, or to be carried away by strong emotion, will constantly operate to produce a recurrence of stammering. Now this disease is different from all others, for the moment the patient who has imagined himself cured, hears himself stammer, he loses confidence; the fear of stammering returns, and causes him to stammer in his next attempt at utterance. Perfect self command, is, therefore, all important.

Whatever method may be employed for the relief of this affection, no permanent advantage will be gained, in the majority of cases, unless resolutely persevered in for one or two years. With this perseverance, it may be cured with as much certainty as any other chronic disorder, and this not by any new or patent method, but simply by attention to the course I have described.

Boston, August, 1837.

ART. V. *Clinical Report on the Surgical Department of the Philadelphia Hospital, Blockley, for the months of May, June, and July, 1837.* By WILLIAM E. HORNER, M. D., Surgeon, Professor of Anatomy in the University of Pennsylvania, &c.

As this institution presents the most extensive and complete example of a clinical establishment in the United States, the following summary of its features may be interesting to such as have not seen it. It is a portion of the Alms-house for the city and adjoining districts of Philadelphia. Its name is rather conventional than estab-

lished by law; but from its magnitude, and almost perfect insulation from other parts of the building, there are both propriety and convenience in a distinct title, which is now getting into use, though rather slowly.

It is of stone, rough-cast; presents to the south a front of five hundred feet, with the centre and extremities projecting; is three stories in height, with the stories averaging more than fifteen feet in the clear. The entire Almshouse consists of a hollow square, formed by the Hospital and three other buildings, of the same general appearance with the first, excepting that the one facing to the east presents a massive Doric portico of granite. The whole range, if in line, would make a three story building of eighteen hundred feet in length, and averaging nearly sixty-five feet in depth.

The Philadelphia Hospital contains eighteen wards, of forty-eight by forty-four feet, and six of forty-eight by twenty-two. Of these, there are eight wards, that is, two small and six large, on each floor, separated equally into east and west by the centre of the building, which thus has four wards on each side of it for each story, with a north corridor or passage ten feet wide. The eastern wards contain the men, and the western the women. The extreme ends respectively of the Hospital accommodate the lunatics of the two sexes, so as to furnish on each story forty lunatic cells, four mess rooms, and two nurses' rooms; in all one hundred and twenty cells and eighteen large rooms. There are, in addition, two large parlours and four yards attached to the cells.

The wards have all a delightful exposure to the south, giving a fine view of the river Schuylkill and the adjacent highly cultivated district of country. There being no impediment on that side, they are under the most favourable circumstances for a free and pure ventilation directly from the country. An extensive and well kept culinary garden belonging to the institution, is immediately below them on the same side.

The first story of the centre portion is occupied by the apothecaries' shop, the library, and the parlour for the prescribing and resident medical corps. Upon the second floor is the lecture room, measuring seventy-five feet six inches by fifty-two feet square, and having an elevation of thirty-two feet. In the centre of it is an area of seventeen feet in diameter, from which rise, by successive stages, eleven rows of seats.

The seats are elevated on the plan of an inverted cone, (not like a funnel, as is common in amphitheatres,) whereby every row of students has the same angle of demonstration over the heads of the row

in front. (An idea first suggested and carried into execution by myself, so far as I know, at the construction of the lecture rooms of the Medical Institute, and of the anatomical amphitheatre of the University in 1829.) This room is well lighted from above, and also on the sides, so as to render it entirely proper for delicate operations. The space left below the seats to the floor is occupied by four private wards for patients operated on, and by a consulting room for the surgeons, which also accommodates their instruments.

The surgical service of the above institution is conducted in twelve wards, intermingled with an equal number allowed to the medical service. My mode of attendance was to visit five or six times a week, there being four regular prescribing days, two for the male and two for the female side. This arrangement of duty enabled me to see almost every day such patients as were ill.*

The mean number of surgical patients obtained from four periods of the above mentioned tour of duty, was one hundred and twenty-three: the lowest sum at one time being one hundred and eight, and the highest one hundred and thirty-six. In the winter season the number ranges near two hundred. The patients are, with inconsiderable exception, adults, there seldom being six children at any one time, as their diseases are generally treated in another division of the Almshouse establishment called the Children's Asylum. Of the medium number, one hundred and twenty-three, eighty-four were males and thirty-nine females: eight of the former being black, and seven of the latter.

I have remarked on this, as on preceding tours of duty, that primary and secondary syphilis were comparatively rare among the blacks; gonorrhoea more common, especially among the males, than syphilis in all of its forms. The general impression in Philadelphia is, that the habits of sexual intercourse of these people are loose; under which admission they certainly present, in proportion to their whole number and their indigence in our population, much fewer cases of venereal affection than one would expect. The inquiry is therefore started, whether they are less liable to such diseases than the whites, or have them more mildly. Exact numerical returns from the different public institutions of our city, and other cities where they are treated in hospitals, would throw an interesting light on this subject. It may be here remarked that they are very liable to scrofulous affections of

*Some further details respecting this Hospital will be found in our Number for August 1835 p. 391 &c. —E2

the skeleton and skin, which, without due caution, might be attributed to secondary syphilis.

The following list will show the range of surgical diseases, and the highest number at once and lowest number also at once, of individuals under treatment for any affection named. In some instances the same patients continued in all the time; in others there was a succession of them.

| | | | |
|---|--------|--|--------|
| Abscess, mammary, | 1 | Vesico-vaginal, | 1 |
| Abscess, common, | 1 to 3 | Vagino rectal, | 1 |
| Anthrax, | 1 to 4 | Fissure of Rectum, | 1 |
| Burn, | 1 to 2 | Furunculus, | 1 |
| Bite of Dog, | 1 to 2 | Fungus Hæmatodes, | 1 |
| Bladder, inflamed, | 2 | Frost bite, | 1 |
| Cellular Tissue, chronic inflammation of, | 1 | Gangrene, simple, of toe, dry, of foot | 1 |
| Contusion, | 1 to 3 | from typhus fever, | 1 |
| Calculus, | 1 | Hydrocele, | 1 |
| Caries of Spine, | 1 to 5 | Hæmorrhoids, | 2 |
| Petrous Bone, | 1 | Knee, inflammation of, | 1 |
| Cranium, | 2 | Luxation, . | 1 |
| Carpus, | 1 | Leucorrhœa, | 4 to 6 |
| Tarsus, | 2 | Necrosis, | 1 |
| Os calcis, | 1 | Neuralgia of female mamma, | 1 |
| Cartilage in Knee Joint, | 1 | Ozena, | 1 |
| Coxalgia, | 2 to 4 | Prostate enlarged, | 1 |
| Elephantiasis Græcorum,* | 1 to 2 | Pain in thigh, | 2 |
| Eye, affections of. | | Psoas abscess, | 1 |
| Amaurosis, | 1 to 2 | Paronychia, | 1 |
| Ectropium from burn, | 1 | Polypus of Nose, | 1 |
| Entropium, | 1 | Syphilis and Syphiloides. | |
| Conjunctivitis, acute, | 1 to 3 | Bubo, | 2 to 4 |
| chronic, | 2 to 3 | Chancre, | 2 to 5 |
| Ulcer of Cornea, | 1 to 2 | Gonorrhœa, | 4 to 9 |
| Iritis, | 1 to 2 | Phagedenic Ulcer of Penis, | 1 |
| Staphyloma, | 1 | Syphiloides serpiginosa, | 1 |
| Unguis, | 1 to 2 | Ulcers of Vagina, | 2 to 3 |
| Fistula Lachrymalis, | 1 | Ulcers of Palate, | 2 to 3 |
| Face, inflammation of, | 1 | Ulcers of Female | |
| Fracture, | 1 to 5 | Urethra, | 1 to 2 |
| Fistula in Ano, | 2 to 4 | Warts, | 1 to 3 |

* Both black; one a girl, the other a man.

| | | | |
|-----------------------------------|----------|--|--------|
| Blotches, caries, ulcers, &c., | 7 to 11 | Ulcers of Foot, | 3 to 5 |
| Sinuses, | 1 | Head, | 1 |
| Stricture of Urethra, | 1 to 2 | Sacrum from pressure, | 1 |
| Scrofula, | 1 | Neck, | 1 |
| Scabies, | 1 | Varicose veins with and without ulcer, | 6 to 8 |
| Testicle, inflamed, | 1 to 3 | Wound, incised, | 1 to 3 |
| Tinea Capitis, | 1 | punctured, | 1 |
| Tonsils, enlarged, | 1 | contused, | 1 |
| Ulcers of Leg, generally chronic, | 20 to 37 | | |

From the foregoing list it will be seen that about seventy-five specific forms of disease were treated, a very large majority of them being such as are in the daily walks of surgical practice, others are comparatively rare, and some few so uncommon as to be curiosities in their way. Taken in a group, their number and variety show that the clinical practice of the surgical wards presents a very extensive field for the observation of the phenomena of disease, and for determining the value of treatment.

Operations were not infrequent: to young medical men they constitute the most engaging feature of surgical business; to such as are older, and when the judgment is more calm, they are viewed for the most part as mere substitutes to more desirable but unknown modes of treatment, except when they are called for by sudden injuries effecting a mechanical lesion, and therefore requiring a mechanical reparation.

The following *operations* were performed, besides several of less importance:

The opening and management of large abscesses. Relieving an adhesion of the arm to the side, produced by an extensive burn. Chiselling away the dead bone of a carious cranium and face. Heurte-loup's operation for urinary calculus. Two amputations of leg. One amputation of forearm. Setting and dressing eight recent fractures. Three operations for fistula in ano, by seton. One operation for fissure of rectum by actual cautery. Removal of fungus hæmatodes from side of head. An operation for radical cure of hydrocele. One for ectropium. One for entropium. One for pterygium. One for vesico-vaginal fistula. One for recto-vaginal fistula. One for polypus narium.

When I first took charge of the wards, in the month of May, cases of anthrax were of frequent occurrence; none of them, however, of very great extent, their size ranging from that of a black walnut to a filbert. They were managed successfully and without difficulty, by

the free application of caustic potash to them, on the plan recommended by Dr. Physick, and until the gangrenous portions had been completely corroded by it. The subsequent use of emollient poultices made them heal up very rapidly.

The amputations performed were all for caries; two of the tarsus and one of the carpus. The current practice of Philadelphia in similar cases is to endeavour to effect a cure by rest, a diet somewhat regulated, and the various officinal preparations of sarsaparilla, either with or without very small doses of corrosive sublimate or some other mercurial. My own experience is, that when the joints of the tarsus or carpus are opened or exposed to any extent from the progress of this affection, such treatment, or any other in use that I know of, is so uncertain as to be unworthy of confidence, and can scarcely be considered remedial. The native powers of the constitution sometimes enable one to pass through the stages of carious carpus, leaving, however, the forearm shrivelled, and the tendons of the wrist and of the fingers fixed and adherent; so that the mildest termination is an extremity incapable of executing its flexions and motions generally. The progress of caries of the tarsus is, however, such as to lead almost inevitably to a fatal termination, by the developement of tubercles in the lungs and the general vitiation of the solids and fluids of the body, and especially the lymphatic system. In view of this almost certain tendency a surgeon should, at a period much earlier than common, before the extreme emaciation, the hurried respiration, and the pulse beating from one hundred to one hundred and forty or more in a minute, anticipate these evils by amputation. One of the patients with carious tarsus was lost by such delay.

It may be canvassed, whether the surgery of our city is in so sound a state as it ought to be in this complaint, and in many severe and sudden injuries affecting the extremities: I allude especially to compound fractures, lacerations, and comminutions; owing to the extreme reluctance to perform amputation, and the strong desire to make a distinguished cure of a very unpromising accident. In the course of things such remarkable cures do happen; but they are so few, and at such long intervals of time, that they can scarcely be considered as representing rules of practice, and are rather exceptions to ordinary results, being obtained at a large sacrifice of life in other instances.

Fistula in Ano.—The common mode of treating this disease now is by a division of the sphincter ani. My own impressions are in favour of the seton, and the cases treated were in that way. The time was too short to exhibit results; but from preceding experience,

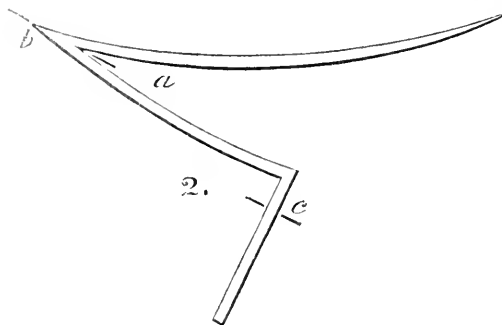
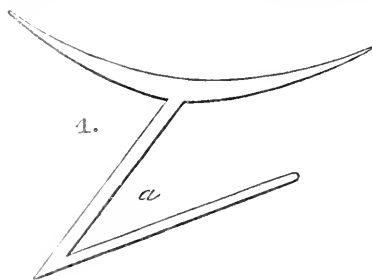
and especially when the constitution is impaired, it appears to me to be the best of the several modes.

Hydrocele.—The injecting process with wine or a solution of sulphate of zinc, also the seton, has a degree of uncertainty frequently productive of disappointment, and leaving much to be desired. In the solitary case which presented itself, and where injection had failed in the private practice of another surgeon, I cured the patient without trouble by the old plan of laying open the tunica vaginalis freely, and introducing a fine linen rag, which was retained till suppuration followed. The cavity contracted gradually, and was obliterated in about three weeks.

Coarctation from Burn.—The difficulty of correcting deformities depending upon the cicatrix of an extensive burn, is among the most insurmountable in surgery. It is well known that the cellular substance left or regenerated under such circumstances, is deficient in the normal laxity, flexibility, and easy sliding motion of the laminæ over each other; becomes hard, thickened, and is transformed into firm elastic masses or layers, exhibiting a state called *inodulæ* by Mr. Delpech, (*Clinique de Montpellier*, tome ii. p. 379.) The same condition also exists in the skin, whose organization is then still less normal than the cellular substance. A patient named M'Cullough, a weaver by trade, aged about 40, who had been exposed to the accident of fire, which burnt very extensively the right side of the chest and the contiguous part of the arm, being treated at home for the injury, it was allowed to be repaired in such a way that when the sore was reduced to the size of the palm of the hand, the arm was pinioned to the side by the anterior and posterior folds of the arm-pit; which extended nearly to the middle of the arm, and by their inodulous state fixed it almost immovably to this position. The arm-pit itself was converted into a narrow cylindrical cavity, about large and deep enough to receive the whole of a finger. To relieve this, the folds of the arm-pit anteriorly and posteriorly were cut through to the margin of the pectoralis major and of the latissimus dorsi, and in the progress of the treatment the arm was kept constantly more and more separated from the trunk, so that it finally acquired a susceptibility of extension amounting almost to a right angle, and quite sufficient for the exercise of his trade. When my term of service expired the sore was about the size of a dollar, and promised to be entirely well in a short time.

Coarctation of Eyelid, Ectropium.—A. Curry, aged 42, a labourer, of good constitution, had an ectropium of the lower lid of the right eye, arising from loss of skin on the cheek by a burn four years ago.

The whole of the tarsus cartilage was permanently everted by the shortening of the contiguous skin when the part healed. The conjunctiva of the lid was exposed nearly half an inch in breadth, was highly inflamed, ulcerated, with scabs on it, and much thickened. The deformity was such as to make his appearance very disagreeable; and to that disadvantage was added the pain and paroxysms of additional inflammation from dust and moats getting into the eye when he attempted to work at his vocation. The loss of substance, and the ectropium depending on it, was successfully treated by the following plan:—An incision, two inches in length and down to the bone, was made parallel with and at the inferior margin of the orbicularis muscle. The whole thickness of the eyelid was then dissected up from the adjoining bones. From about the middle of that incision started another, of an inch in length, downwards towards the angle of the jaw. From the termination of the latter another incision of the same length was directed towards the root of the nose. The two last incisions consequently defined an angle of integuments, which, being dissected up as far as its base, was then turned into the beginning of the first incision. The following diagram will illustrate the operation.



The angle A, *Fig. 1*, taken from the cheek, was inserted into the lower eyelid, as seen in *Fig. 2*, and a pin fixed at *b* and another at *c*, so as to keep the parts in place. An almost immediate correction of the deformity ensued. Common dressings were put on, and at the end of two weeks the cure was

accomplished, with the exception that the margin of the lid was rather loose, but still leaving the prospect of that being corrected by a natural process of shortening in due time. He, in fact, was so far well, that he was discharged

from the wards a week or two afterwards. This may be considered

as one of the numerous illustrations now in progress of the value of looking to contiguous sound parts to supply the losses from disease or accident; a practice which, beginning with the nose, at a very remote period on the banks of the Ganges, has been variously modified to suit different organs, according to their respective exigencies.

Leucorrhœa.—The results of a treatment of three cases of women of the town, whose leucorrhœas it is extremely difficult to distinguish from blennorrhagia and the reverse, excited strong hopes that this obstinate affection is susceptible of an improved mode of cure, the first idea of which originated, I believe, in the French capital; to wit: that of cleaning out the vagina well every day with some abluent, and then packing it full and systematically with lint, by the aid of a speculum; the first step of the dressing being to keep off the lips of the womb from the vagina, by filling up the connecting depression.

The detergent used in one of the cases was the liquor sub-acet. plumb., and the vagina was afterwards plugged with cotton. An ulcer existed at the beginning on a lip of the womb. This patient, from being stationary previously, improved rapidly under the treatment. My tour of service being brought to a close, she was subsequently put on copaiba mixture by my successor, Dr. Pancoast, and is now (September 7th) nearly well.

A second patient was cured very rapidly and perfectly, by the daily plugging of cotton, and cleansing with soap and water. The treatment lasted about two weeks, at the end of which time she was seized with symptoms of inflammation of the womb, which also got well. Whether the latter disease was a consequence of the treatment, or merely a concomitant of the other, cannot be determined until more cases managed in this way are brought before the profession.

A third case was cured in eighteen days, and without accident, by daily plugging with cotton and washing the vagina clean.

In following up the treatment of the preceding cases, I was much assisted by the assiduity and ready co-operation of Dr. Frisby, one of the resident physicians of the house.

Syphilis.—A mere clinical report must exclude discussion; without entering, therefore, into the merits of the two systems of practice that now prevail, to wit, the mercurial and the anti-mercurial, I must affirm, that in several cases of secondary syphilis, the cure appeared to me, to be evidently accelerated by mercurials. The quantity administered was kept within the limits producing salivation. The preparations which I preferred were the blue pill—corrosive sublimate—and iodine of quicksilver. The latter was administered with

surprising efficacy in the case of a child two or three years old, who had hereditary syphilis, showing itself by a chronic efflorescent eruption, with disease of the metacarpus and metatarsus. In ulceration of the palate, it appears to me that there can be no more efficient treatment than an abstemious regulated diet—blue mass to the amount of six grains daily—and the application of lunar caustic daily to the surface of the sore, so as to cover it completely with a thick, well formed eschar. The rigidity of the pharynx and fauces, which attends this affection, may be much relieved by hot gargles of the infusion of sage with borax and honey in it.

The blue pill had also very evidently a strong controlling influence over the copper coloured and other eruptions, belonging to the genus of syphiloid affections.

Acute Gonorrhœa in Males.—In this affection the symptoms being so distinct as to leave no doubt of their nature: the piper cubeba exhibited the most marked and incontestable influence. In nine cases seven were cured on an average treatment of ten or twelve days; an eighth was relieved, but not cured; and in the ninth the remedial value was unsettled, perhaps nugatory. The plan of treatment was to resort to blood-letting, when there was plethora, and the pulse full; to open the bowels freely with a saline cathartic, to keep the patient on a vegetable diet; and then to administer a drachm morning, noon, and night of the powdered cubebs, directing during the continuance of this course, to use as little water or diluent drinks as possible.

My former mode having been principally the use of astringent injections and cathartics, I may now safely say, that at no preceding tour of duty, have I found the cases of gonorrhœa so effectively treated.

In some cases I used on comparative trial, the balsam of copaiba, but not so frequently as the cubebs, and with results much less beneficial, it appears indeed to be an agent of much inferior power.

Calculus removed by Lithotripsy.—Morehouse, aged 36, has had symptoms of calculus since he was sixteen; and suffered so much from them, that he was frequently induced to drink excessively, to assuage his pain. This latter practice had produced for some time habits of intemperance, which he says he had abandoned for a year or more. He is a labourer, of good constitution, and full stature. The calculus was from sixteen to twenty lines in diameter.

After having kept him on a low diet for a week, I operated on him the 7th of July, with Heurteloup's instrument, having previously filled the bladder with four ounces of tepid barley water. In a sitting of from fifteen to twenty minutes, the calculus was reduced to fragments of various sizes, some of them that of sand. The operation

was attended with a considerable discharge of clotted blood, and some pain, magnified, however, by the timidity of the patient.

The procedure of the operation was partly by striking with a hammer, and partly by screwing up the instrument. After having comminuted the stone considerably, I then introduced Jacobson's instrument to finish the trial with, but from the refractory state of the bladder it could not be used without risk of injuring the neck of the latter, it was, therefore, withdrawn.

In half an hour after the operation, I found the patient sitting up; he said that he felt easier than he did before the operation. The next day he was feverish, with pain in the hypogastric region, and quick pulse; he was, therefore, bled to the amount of sixteen ounces, and took the neutral mixture every two hours. In the course of this day he discharged sabulous matter.

On the 9th of July, the preceding symptoms of indisposition had abated, but his testicles and epididymes became swollen and painful, attended with pain in the small of the back. Forty leeches were applied to the scrotum.

On the 14th of July, the symptoms having disappeared, I re-applied Heurteloup's instrument, and in a few minutes comminuted by the same procedures several of the large fragments. He discharged immediately a considerable quantity of calculous matter, and continued to do so during the day, whenever he urinated, with putting the neck of the bladder in the most depending position.

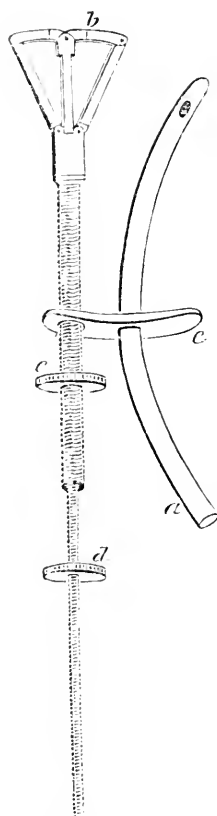
Between the 14th and the 17th, he had discharged a dessert-spoonful of the calculus: at the latter period I performed a third operation, and comminuted what remained.

An examination on the 21st, found him with his bladder perfectly freed from calculus, and without more than a healthy sensibility.

On weighing all the fragments, they amounted to two drachms and ten grains, and belonged to calculous formations of the hardest kind.

Vesico-vaginal Fistula.—The present state of the curative attempts in this disease leaves much to be desired, and the truly miserable condition in which its victims are placed, can scarcely fail to excite the sympathy of every one understanding its nature. The following suggestion is, therefore, presented as a basis for some new attempts: to wit, to bring the *womb* so far down in the vagina that its anterior face may be so fixed as to supply the loss of the *inferior fundus* of the bladder and *its neck*. This idea was put on trial in the following case.

Catharine Hurley, a short, robust woman, of good conformation in the pelvis, and aged about thirty, from some mismanagement in par-



a Catheter, with its shoulder *a*.
b Ephelcometre.

c Sliding part, cut in screw fashion, with a nut.
d The handle, cut in screw fashion, with nut.

The nut of *d* prevents, by being screwed up, the part at *b* from closing.

The nut of *c* prevents the catheter from being forced out of the bladder, inasmuch as it would arrest the shoulder.

turation two or three years ago, suffered a slough of the greater part of the vesico-vaginal partition, the consequence of which is a constant stillicidium urinæ, keeping her person in a state of ammoniacal fœtor, and excoriating extensively her pudendum and thighs. Thinking her's a suitable case for experiment; after having previously tried it on a dead subject, where I made an artificial vesico-vaginal fistula; I resorted to the following process.

A silver instrument of four inches in length, resembling a female catheter, but having a broad circular shoulder in the middle, was provided for the bladder. Another instrument, founded upon the idea of the ephelcometre* of Mr. Guillon, and resembling in its construction an umbrella frame deprived of all its arms but two, and they cut off beyond the second joint, was provided for the uterus. It was made to expand like an umbrella and to close in the same way; and when expanded, it assumed at its upper part a triangular form, of the shape and dimensions of the cavity of the womb, but when closed, it was a cylinder of three lines in diameter. This instrument, when closed, could be readily introduced into the womb and afterwards expanded there, which expansion gave a complete command of the position of the womb, for by the handle of the instrument the womb could be drawn down at pleasure or shoved back, or, in fact, directed in any way.

The first instrument being introduced through the urethra into the bladder, after the second was expanded in the womb, the bladder was shoved back by the shoulder of the catheter, and the womb brought down by the ephelcometre.

* *Medicine Operat.*, par M. Velpeau, planche xx., fig. 11. The name, I presume, is from the action of the instrument *Εφελκίζ*, attraho, *Métrage*, mensura. It is intended to draw the womb down in the excision of its neck; which operation is frequently performed by Mr. Lisfranc of Paris; but, according to verbal reports on the subject, with a very great loss of patients; so much so as almost to have discredited it entirely.

The handle of the latter was carried through a hole in the shoulder of the catheter, and fixed in its proper position, so as to be stationary. The relative position of the womb and bladder was now such that the womb plugged up the opening in the fundus of the bladder, and it only required the surfaces in contact to form adhesions for a cure to be the result. To facilitate those adhesions, the edges of the fistula were touched with lunar caustic.

Catharine Hurley wore this apparatus for two days without much inconvenience; there were, however, some mechanical defects in the construction of the catheter, which made it more painful than it need be, and I took it out to undergo amendment. Her intellects being extremely feeble, she did not seem to feel either the physical or moral value of a cure, and became unmanageable, interposing a great many unnecessary obstacles to a second adjustment of the apparatus. She finally declined further treatment, so that she was abandoned at this stage.

A judicious application of this apparatus and treatment ought to be successful in many cases now considered incurable. The constitutional irritation from having the womb fixed in the way alluded to, and which I had apprehended, was unperceived in Hurley; but perhaps in a female of greater refinement there might be more disturbance. The appreciation of this point, once settled favourably by observation on a multitude of cases, I can scarcely doubt that the method of treatment here proposed and instituted must have a decided superiority in the cases generally of vesico-vaginal fistula, over the treatment by suture. I have myself not been able to succeed by the latter, owing to the stitches not holding long enough to be available; and I am disposed to believe that such is the common experience in the trials of them, though there appear to be a few cures. The cure by stitch must be absolutely impracticable whenever the slough takes away the ureters along with the fundus of the bladder; a condition which, from what I have seen, is as common as any other, if not more so. My plan will at least be preferable there.

Recto-Vaginal Fistula, treated by division of sphincter ani muscle.

—This malady, arising from a slough produced by parturition, though not so harassing as the other, is almost on the same footing of incurability. The difficulty of retaining sutures available in place is the same; they soon come away, or are torn out.

Having in the wards a coloured woman named Brown, aged about 35, and of pretty good constitution, I undertook to treat her by paring away the callous edges of the fistula, fixing the opposite sides together longitudinally by two stitches, and then dividing the sphincter ani

muscle, so as to prevent the possibility of the stitches being torn out in the defecation.

This woman having undergone the operation very patiently, and being, in the course of treatment subsequent thereto, got into a paroxysm of violence and indocility which counteracted every thing, and produced an erysipelatous inflammation of the pudendum, which rendered the attempt futile for the time, and the termination of my tour of duty, prevented the renewal of the experiment on her.

The plan, however, of treatment appears to be, if properly conducted, quite as promising as the division of the sphincter ani for fissure of the rectum; and it would at least be a valuable contribution to our professional archives to exhibit its results upon several cases.

Philadelphia, September, 1837.

ART. VI. *Cases of Extensive Malignant Disease with Remarks.*

By E. HALE, M. D. [Read before the Boston Society for Medical Improvement.]

Pathological observations, to be of any great value, require not only to be made with accuracy and care, but also in considerable numbers, that the different phases of disease may be compared; the phenomena that are constant, in similar diseases, distinguished from those that are accidental: and legitimate deductions drawn from the aggregate result. A single case establishes little or nothing. But a physician in general practice, unconnected with a large Hospital, has too few opportunities to see such diseases as are of rare occurrence, to be able to bring together any considerable number of observations, in regard to them. He must, therefore, do nothing towards the advancement of pathological knowledge, or must be content with a lower grade of utility, by collecting his cases into such smaller groups, as he may have opportunity to form, and leave it to others to analyze them more fully. It is in this humble view of their value that the following cases are communicated, as not altogether devoid of interest; although much less satisfactory than they might be, if the means were presented of a more extensive comparison with others of analogous character.

CASE I.—*April 28, 1837.* Mrs. S., widow, aged 57 years, has borne children; has been gradually losing health, during the whole winter and spring, and perhaps longer. She has no very distinctive

complaints: is hardly aware that she is sick enough to need a physician; and now has only yielded reluctantly to the solicitations of her daughters. The only positive symptoms, described by herself, are some not very strongly marked indications of derangement of the digestive organs, accompanied by loss of strength and energy. She is more than enough disposed to sleep: pulse moderately quickened: bowels disposed to costiveness. Her complexion has a remarkably sallow hue, as of a person suffering from profuse hemorrhage; but she has had no unnatural or excessive discharge of any kind.

June 2nd. She has been treated chiefly in reference to the derangements of the digestive functions, by mild cathartics, with some unsuccessful attempts to use light tonics. The disease has, apparently, made very little progress either way. At times she has thought herself improving a little; but, on the whole, the change is very slight. The countenance has the same bloodless expression; tongue pale, with a slight coat; pulse 78. I examined her, with considerable care, by percussion and auscultation without discovering any morbid phenomena. She is still down stairs, and takes some part in managing the affairs of her family.

June 13th. She has fallen off greatly since the last visit. She is now confined to her bed; is unable to walk across her chamber; complains much of dizziness and a sense of swimming in the head, with palpitations of the heart, whenever she makes any exertion, or rises suddenly from her pillow. When perfectly at rest, she breathes without difficulty; lies on the back, or on either side indifferently, the shoulders not at all elevated; pulse 104, tolerably full, but soft and compressible; skin paler than before; no degree of friction will excite either redness or heat on any part; precordial region somewhat flat on percussion; resonance good in all other parts in front; respiration vesicular; faint over the heart, puerile below the left clavicle, and also in the right breast; impulse of the heart rather feeble; both sounds of the heart distinct; a strongly marked bellows sound after the first; some flatness in both backs; a slight bronchophony in the lower right back. Most of these observations were confirmed the following day by Dr. O. W. Holmes, whose ear is more practised than mine in external exploration. The flatness of the precordial region was particularly noticed by him.

July 1st. The patient has declined from day to day, without any considerable change in the character of the symptoms, until this afternoon, when she died. The dyspnoea increased and became the most prominent cause of suffering, but did not require the shoulders to be elevated. The paleness increased. There was never the slightest

appearance of lividity. There was no swelling of the lower extremities until the last day.

After her death I learned, for the first time, that more than three years ago she had had, what was called by some doctor, a cancer in the right breast; that she had put on "bug poison," which had *killed it*,* [the daughter's expressions,] and it had not troubled her since. I had been in attendance on her family previously to the time indicated, and was never consulted for any thing of the sort. It appears, however, that she had always manifested a peculiar shyness on this subject; although I do not think she would have concealed it from me, if she had been conscious of any suffering from such a cause in her last sickness.

Examination sixteen hours after death.

Externally.—The paleness of the skin was still very striking; body not emaciated; chest flat on percussion at the sides, sounded well in front; no flatness over the heart. There was a hardness in each mamma: the internal texture of the right was hardened and leathery, but the glandular structure was not destroyed: in the left was a scirrhus tumour, about two-thirds of an inch in diameter. The muscular substance was pale and soft. The cartilages of the ribs were ossified.

Chest.—There was half a pint of bloody serum in the left pleura: the right cavity was obliterated by old adhesions of the lungs to the ribs and diaphragm. Both lungs were highly œdematous; there was no hepatization, and no tubercles; they were carefully sought for, but none were found. There was in the bronchial glands a scirrhus mass of considerable size, and a scirrhus tumour about an inch in length in the lymphatic glands of the neck, a little below the larynx, on the right side. The lower portions of the trachea were ossified. The pericardium was healthy; quantity of water natural. The size of the heart was natural, but it was flaccid and its fibres relaxed, giving it the appearance of being somewhat enlarged; its texture was pale and soft; the cavities of natural size; the parietes thin; the average thickness of the left ventricle four to five lines; the lining membrane of the cavities thickened and opaque. The valves were all healthy. The blood in the heart and great vessels had a peculiar appearance; the coagula soft and tender, and the serum of a dirty brown colour.

Abdomen.—There was about half a pint of serum in the cavity of

* The "bug poison" was doubtless a solution of bi-chloride of mercury. The daughter's expression alluded to the notion still prevalent in certain classes of the community, that cancer is a living animal, preying upon its victim. I of course attach no importance to the statement of the influence of the application in this case.

the abdomen. The liver was small and flaccid. There was a scirrhus tumour, four lines in diameter, in the convex surface of the right lobe, extending about the same distance into the substance of the organ; and another of the same kind about three lines in diameter in the concave surface. The gall bladder contained a large number of small calculi. The stomach was healthy. Externally the pyloric portion was attached to the arch of the colon, by means of a scirrhus mass, which was situated in the omentum at this part. There was a mass of scirrhus glands in the mesentery, and a large mass of lymphatic glands in a state of schirrus, extending along the left side of the spinal column. Both ovaries were much enlarged; one of them as large as a hen's egg; their external surface uneven; internal structure entirely scirrhus. The uterus was healthy, except some slight appearances not worth recording. The left kidney was healthy, the right was dense throughout, and one tubular portion was scirrhus. The bladder was healthy, and was distended with about half a pint of urine. The axillary and the inguinal glands, on both sides, were diseased.

The several scirrhus tumours presented, in general, nearly the same appearance; they were hard, and their cut surface shining with a pearly whiteness. That in the bronchial glands was partially softened into a gelatiniform consistence, of the same pearly colour. In one of the ovaries was a small cavity filled with a reddish fluid, which might, perhaps, have been the commencement of ulceration.

CASE II.—*April 19.* Mrs. H., widow, aged 69 years, has borne one child. Has had rather unusually good health through all her long life until the last winter. About the 1st of December, she began to lose strength and appetite, and to feel more or less of pain in the abdomen. Those symptoms have been gradually increasing to the present time; but she has not taken either advice or medicine. She is now able to walk out; feebly, however, and is much fatigued by exercise. She complains chiefly of great oppression after taking food, with a constant sensation of sinking in the region of the stomach; a constant uneasiness in the lower part of the rectum, with violent pain at every fæcal discharge; bowels constipated; urine scanty, and passed with pain; abdomen tense and tender on pressure.

R. Pil. hydrarg.; pil. aloes and myrrh, āā ʒss.; extract conii, gr. xii.; M. f. pil. No. xii.; one pill every night.

A solution of equal parts of bi-tartrate of potass and acacia gum to be taken freely as a drink.

May 18.—The oppression at the stomach is somewhat relieved; she suffers less from taking food, but has little appetite. The pills have

produced copious evacuations of solid fæcal matter; abdomen very tense and tender, so as to render a thorough examination of it impracticable; no change in the state of the urine; nights restless and sleepless; continue the pill at night with an additional grain of extract of conium. R. Spiritus. æther. nitros.; tinct. humuli, āā ʒi. of which take one drachm four times a day.

June 27. She has continued the pills with various slight modifications up to this time. The discharges from the bowels have not been very copious, but they have been produced once or twice daily, and have always consisted of fæcal matter. She has taken opium, in moderate doses, and has tried hyosciamus, besides the conium, and the tincture of hop, but neither has given her much rest or sleep. She has also used various diuretics with very little apparent immediate effect, although the dysuria has gradually subsided, and is now gone. Mustard poultices and blisters have been applied to the abdomen. The tension and tenderness are greatly diminished. A large hard tumour is now felt in the right iliac region, extending up the side, and spreading partially over the abdomen. It is moveable, very tender on pressure, and terminates at the lower extremity in a thick round mass. The oppression after eating is wholly removed, though she still has little appetite for food. The pain and uneasiness in the rectum are gone. The pain in the abdomen is at times severe, but not constant.

From this time, for a few days, she improved greatly in appearance and comfort. The discharge from the bowels increased in quantity; it was quite offensive and consisted of scybalæ, at times more or less softened by accompanying fluids, often hard, and in their interior portions almost dry; one or two such discharges were obtained daily, and in two or three instances several more, with very little apparent exhaustion. The other symptoms were all greatly mitigated, and she regained something of her natural cheerfulness. A pill of extract of conium, with one-sixth, and afterwards a quarter, and then a third of a grain of sulphate of morphia, generally gave her a quiet night and sufficient sleep.

July 2nd. The blue pill was omitted, and a pill substituted containing aloe, two grains; sulphate of quinine, one grain; little change of symptoms.

July 4th. She began to complain of occasional nausea, chiefly in the morning; for which she took tincture of cinnamon and laudanum, with little or no benefit. The paroxysms of pain in the abdomen had become more frequent and more severe. On four successive mornings she took a pill containing two and a half grains of rhubarb and

half a drop of croton oil. They were followed by large discharges of the same character as before, with much relief of the pain in the abdomen and of the nausea, and without much sensible depression of the strength.

July 26th. The nausea has increased, and is now nearly constant. She vomits every morning, and occasionally at other times, a whitish ropy liquid. She never throws off her food or drink, of which, however, she takes very little. Her strength is much reduced in the last ten days. For several days she has omitted the cathartic pill, but has had one or two faecal discharges daily. The tenderness in the abdomen, over the tumour, continues, but she has no constant pain. The abdominal tumour is less prominent, but does not appear to be diminished in extent. The pulse has, until recently, been but moderately quickened; it is now 112. The tongue has, for a long time, been covered with a loose slimy coat, which has now become brown.

August 1st. Pulse 132, comatose. No material change in the character of the symptoms. They have been from day to day more aggravated, and the strength has steadily declined. She died in the night.

Various other remedies were tried at different times for the vomiting, besides those already mentioned; effervescing draughts, creosote, &c., but without benefit. Twice she took an emetic, and was slightly relieved for a few days after each. The matter vomited was, to the last, only such as is above described, a white ropy liquid.

Examination nine hours after death.—The body was very considerably, but not excessively emaciated. The mammary glands were natural. The cartilages of the ribs were not ossified. There were some slight adhesions of the right lung, which were of long standing: no effusion in either cavity. The surface of the lower lobes of both lungs, the left more thickly than the right, was sprinkled with small white tumours, to the number of twenty or thirty in all, similar in appearance to the larger tumours in the other organs, but perhaps a little more firm. They extended from half a line to a line into the substance of the lung, and about the same extent in diameter, but did not project from the surface. In the lower lobe of the left lung was an old irregular cavity, equal in extent to about one half or two-thirds of an inch in diameter, containing several chalky concretions mixed up with curdy matter, one of which was about three lines in diameter. In other respects the lungs were healthy. There was no appearance of tubercles, nor of hepatization.

The heart was small and pale. The right auricle contained a moderate quantity of dark coloured blood, and a small rotten looking coagu-

lum. No appearance of disease was discerned in the heart or valves. Neither the coronary arteries nor the aorta were ossified.

In the substance of the diaphragm, on the right side, was a large whitish tumour, projecting considerably from both surfaces of the organ, but without any adhesion either to the lungs above or to the liver below. Unfortunately this tumour was not particularly examined. Posterior to the situation of this tumour, the diaphragm adhered to the liver for a small space, where it was attached to a similar tumour in that organ.

The omentum occupied the whole anterior portion of the abdominal cavity. About one-third of its upper part was healthy, and was well filled with fat. The remaining portion was converted into a large mass of malignant disease, irregular in its form, extending quite down into the iliac region on each side. It varied in thickness, but the average was more than an inch. At the lower part, on the right side, it terminated in a thick rounded mass, which had given through the parietes the appearance of a nearly distinct tumour. A little below and to the left of the umbilicus, the omentum adhered to the peritoneum for a space of nearly an inch in extent. Besides this, it had only its natural attachments. The density of this diseased mass differed in different parts. Some portions of it, when cut into, resembled the pancreas in feeling and appearance, except that it was less firm, and was perhaps somewhat more vascular. One small portion exhibited something of the appearance of fungus hæmatodes. From the cut surface, generally, a thick purulent looking fluid was forced out by pressure.

The liver was about the natural size. It contained, dispersed through its substance, a great number of tumours of different sizes, several as large as a walnut. They were much less hard and shining than scirrhus, of a dull white colour. Some of them were softened into a custard-like mass.

The gall bladder contained a little thin bile, some bright yellow grains, and two gall stones, two to three lines in diameter.

Stomach.—In the smaller curvature was situated a large tumour. It formed a considerable projection from the external surface of the organ, and its internal face was ulcerated to the extent of three inches in length by two in breadth. The structure of the tumour was unlike that of scirrhus. The mucous coat of the stomach extended some little distance over the internal surface of the tumour, around its circumference, while from all the central portion, it was removed by ulceration. The ulceration extended very little into the substance of the tumour. The muscular coat terminated at the edge of the tumour.

and could not be traced at all into it. The bulk of the tumour was somewhat more than half an inch in thickness. The glands in the immediate neighbourhood were converted into a diseased mass. The texture of this tumour was similar to those already described in the omentum and liver. It was so entirely disorganized that it was impossible to discover any of the original structures. Both the orifices of the stomach were healthy; and so were the other portions of the organ. The several coats were of a natural thickness.

The spleen was small, flaccid and dark coloured. There was a diseased mass, of the same character as those already described, half or two-thirds of an inch in diameter, where the vessels enter the organ.

The intestines were moderately distended, and contained a moderate quantity of fæces. They were not opened except for a short distance in the ileum, where they were healthy. Two or three small masses of disease hung from the surface of the ileum, two or three by five or six lines in extent (being attached by the shorter diameter, so as to give them a pendulous appearance;) and three or four larger masses of the same kind, from the descending colon. They were of the same character as the rest.

The mesentery contained considerable fat; opposite one portion of the small intestine were two cretaceous or bony masses, quite hard, and of the size and form of large cherry stones.

The uterus was not enlarged. The parietes were thin. The posterior wall was either affected by malignant disease, or the disease was external and adhered; probably the first. One portion, about an inch in diameter, was more yellowish and firmer than elsewhere. A diseased mass, about three lines in diameter, projected into the body of the uterus towards the cervix. Elsewhere the body, cervix, and os uteri were healthy.

The right side of the pelvis was filled by a diseased mass, three inches or more in diameter, which was probably the right ovary, more malignant in appearance than any other part. It adhered to the right and posterior part of the uterus. The superior portion of the mass appeared externally like a large cyst, and when cut into, was found to consist of several cysts, from which flowed a clear yellowish liquid. They occupied, however, but a small portion of the whole tumour. The principal mass was a soft solid, of unequal firmness in different parts, nowhere exhibiting a smooth medullary surface, of a whitish grey, opaque colour; in some parts almost softened into abscesses. From the cut surfaces when pressed, there oozed out a considerable quantity of greenish pus. There was no trace of fallopian tube or

ovary on the right side. The left ovary was not enlarged, but its structure was diseased. The left fallopian tube was healthy. The kidneys and bladder were healthy.

Remarks.—These cases are both somewhat remarkable for the great extent of the malignant disease, and the number of organs affected. In consequence of this, death was produced at a much earlier period, in reference to the condition of either of the parts concerned, than in most cases where the local affection is more limited. For the same reason too, the immediate cause of death had but an indirect dependence upon the primary disease; and during the whole course of the disease the symptoms were greatly obscured by the variety of secondary phenomena.

In the first case, the immediate cause of death, was, doubtless, the œdematous state of the lungs. This again can easily be traced to the anemia. Nor is it difficult to believe that the scirrhus state of so many of the mesenteric and lymphatic glands may have occasioned the want of healthy blood. Anemia to an equal extent, it is true, is found, without scirrhus or any similar affection as its cause; and extensive scirrhus is sometimes observed, where it has not produced anemia. Still, where both are found together as in this case, there is so much appearance of satisfactory explanation, in regarding the one as the cause of the other, that it is not easy to resist the impression, that they rightfully sustain the relation of cause and effect. It is curious that in this case there should have been no pain, nor any other indication of morbid irritation in any of the many parts affected.

In the second case, the connexion between the diseased condition of some of the organs and its obvious effects, was more immediate. Yet much of the suffering was of a different character. So much relief, and such a mitigation of symptoms followed the removal of the great accumulation of fecal matter in the intestines, as for a time, to throw some doubt upon the diagnosis; especially as the moveable tumour, in the right iliac region (which proved to be the thickened and hardened extremity of the omentum) might easily be mistaken for an enlarged and crowded cœcum. The feeling of oppression at the stomach, followed by vomiting, would have more surely indicated structural disease of that organ, if there had not been so long an interval of entire relief from it. The vomiting was much less prolonged and less distressing than in ordinary cases of cancer of the stomach. From this circumstance, in connexion with the appearance of the diseased portion, it may be inferred, that the ulceration of the mucous membrane was of recent occurrence.

2. It is of much more importance to remark in both cases the con-

stitutional origin of the disease. Many pathologists do not indeed require any farther confirmation on this point. But there still are those, surgeons especially, who regard malignant disease in the internal organs as the result of absorption from some local affection; and who are ready to believe that if the diseased part had been earlier and more effectually removed, the constitutional affection might have been prevented. In neither of these cases was there any local disease so much more advanced than the rest as to countenance at all the supposition of its having yielded matter to infect the system by its absorption. Whatever may have been the affection of the right mamma in the first case, which was said to have been cured, it could not have proceeded to any such extent, certainly not to ulceration, as to give rise to a morbid poison capable of being absorbed and diffused over the body.

If malignant disease ever is so strictly local as to carry with it, when the part affected is wholly removed, all its malignant tendencies, then there are diversities in its character which the investigations of pathologists have not yet been able to distinguish. This is a question of great practical importance. The expediency and propriety of many surgical operations depend upon it. How often does a patient undergo a painful and dangerous operation, only to be hastened out of life by the rapid developement of the disease in some other part. On the other hand, it cannot be denied that there have been cases which could not be distinguished from true malignant disease that seem to have been arrested, and the life of the patient saved, by the removal of the part affected; and others again in which, although the disease ultimately went on to a fatal termination, its course was retarded, and life prolonged by the operation. Often, however, the result is much less favourable.

3. The nature of the diseased deposit was in the two cases strikingly unlike. Some writers seem to regard the different degrees of hardness in masses of unorganized malignant disease, as little more than differences in the stage of advancement. There was here a marked dissimilarity in the two cases in all the several deposits. In the first they were of a cartilaginous hardness in all their localities; while in the second they were much softer in all, and were destitute of the pearly lustre of the cut surfaces which the first presented, although they did not exhibit many of the peculiarities of medullary fungus. The mode of softening in the latter case was also unlike that of scirrhus. There was a considerable infiltration of fluid in some of the diseased masses; but there was none of the gelatiniform matter so commonly observed in the softening of scirrhous deposits.

The peculiarity of structure was most noticeable in the stomach. The entire absence of the white bands commonly observed, of thickened edges around the ulcer, of depression in its central parts, as well as of soft matter adhering to it, or discoloured fluids ejected from the stomach, distinguish it from ordinary cancerous ulceration of the stomach.

4. The lungs were in both quite free from tubercles. The observation of this fact would be of little value if it were limited to these two cases; but by the kindness of my friend J. B. S. Jackson, M. D., at whose suggestion chiefly the remark is made, I am enabled to extend it much farther. He authorizes me to say that in fifteen or eighteen cases of malignant disease which he has examined, and in which his attention has been particularly directed to the state of the lungs, he has not in any case found tubercles in them. There is an impression among surgeons that patients are liable to die of phthisis after the excision of malignant tumour. In some such cases, in which it was said that tubercles were found in the lungs, the observation seemed to have been carelessly made. How far it is supported by good authority, I am not at this moment prepared to say. The practical interest of this question is still more increased if the inquiry be carried farther, so as to have reference to scrofulous affections in general. If it should be made to appear, as there is perhaps some reason to believe it may be, that scrofula and malignant disease never or rarely co-exist, it will aid us not a little in the diagnosis of many cases of great doubt and uncertainty.

Boston, September, 1837.

ART. VII. *Remarks on the Action of Presence.* By JOHN W. DRAPER, M. D., Professor of Chemistry and Physiology in Hampden Sidney College, Va.

There are certain classes of phenomena, going on in the animal system, which, from their resemblance to chemical operations, have been brought forward as examples of the action of those forces, which have a dominion over lifeless matter. Affinity, and electrical attractions, unquestionably, however, are not the powers which cause these diversified results; so little indeed do they display that energy which characterizes their action over dead matter, that many physiologists

have been disposed to deny their influence over the body, so long as life remains.

The rapid advances of modern chemistry, are every day changing or modifying our views of the forces operating on inorganic masses, to produce change. We are on the very verge of forsaking as untenable, doctrines which during many years have been regarded as the foundations of the science; the number of facts crowding upon us from every quarter, call for these changes of opinion, and they are changes of a character which must seriously affect physiology. Chemistry, as applied to medicine, has hitherto been utterly incompetent to explain in a clear or striking manner, any of the functions of life. We have seen darkly, some kind of connexion, or some faint resemblance; and in a few cases, as in the function of respiration, attempts have been made to bring the action of chemical force to bear, in giving explanations of the phenomena of vital operations. But the chemistry that is taught in the schools, is not the chemistry of life, and it would puzzle many of its professors to say, in what point it can be more extensively applied to physiology, than hydraulics or any other science.

These remarks are called for on reviewing the series of facts, which have been cited by different chemists, as compelling us to modify our ideas of affinity. To me it appears, that the extension of these facts will establish an important branch of chemistry, far more nearly allied to medical philosophy, than the chemistry of inorganic masses. For this reason, I propose to make a few remarks on the *action of presence*, in contradistinction to affinity.

When a compound consisting of two or more bodies, is disturbed by the action of a third, the laws of chemical affinity require, that the third body shall unite with one or both of the other two, or a new compound be formed.

Such is in brief the fundamental postulate of inorganic chemistry; if the nitrate of baryta be decomposed by sulphuric acid, it is essentially necessary that the latter acid should *combine* with the baryta; if muriate of ammonia be decomposed by the addition of lime, it is essentially necessary that the lime and muriatic acid should unite to form a new compound, before the ammonia can be set free.

Now, there is nothing of this kind going on in the animal frame; we see, it is true, the production of an endless variety of substances, but the mode of operation is clearly not that of inorganic chemistry. The kidneys, in separating urea from the blood, add to that fluid no precipitant; there is not, so far as we can find, any destruction of their tissue, accomplished as an essential part of their function; they take from the blood, but they yield it no return, and the same may be said

of any other gland. Does the liver, whose great office appears to me to be, to bring the blood of the chylopoetic viscera to the same chemical constitution as that contained in the great venous trunks from the extremities; does the liver lose any of its bulk or substance in performing that office, in any manner approaching to that definite equivalent quantity that would be rendered up by an inert mass, in accomplishing any change in its chemical constitution? there may indeed be a wear and tear as it were in all the organs, a kind of loss which we look for in the action of every machine; but this is very different from that loss in definite proportions, which must essentially arise if a gland in the performance of its duties, gave up a portion of its own substances in lieu of the substance it was secreting.

It has been from considerations of this kind, that physiologists have been induced to suppose that glandular action bore a certain resemblance to the mechanical operations of sifting or filtration; the structure of the kidney for instance, is such, in their opinion, that it allows the urea to percolate through the fine vessels emptying into its pelvis, but denies a passage to the other constituents of arterial blood. That in certain cases this opinion is correct is unquestionable, though perhaps it admits of very much doubt, whether any one of the operations of secretion are entirely due to this cause; it demands of us a postulate, which chemical physicians are not prepared to grant, viz: that all secreted fluids exist primarily in the blood, and merely ooze out of the vessels wherever they find a suitable leak. Perhaps hereafter it may be shown, that the products of secerning action pre-exist in the blood, but if any one at present should affirm it, he certainly would say a great deal more than he could prove.

The elements of organic bodies being united to each other in definite proportions, it is not an unfair inference that they are subject to the same laws which obtain in inorganic combinations. And yet a check is certainly placed upon the action of those forces, for organic masses never contain a sufficient quantity of oxygen to convert all their carbon into carbonic acid, and all their hydrogen into water. During the life of a plant or an animal, there is no disposition in its elements to satisfy the demands of affinities which appear to be far more energetic than those under which they are existing; affinities which come into full play at the close of life, and only cease with the dissolution and destruction of the whole fabric.

The great difference between the affinity of chemistry, and the force of vitality consists in this, that whereas the former in all the changes that it produces, acts by substituting one element for another, the latter impresses changes without replacing the elements, which

may be abstracted by its operation. As an illustration, the chemist by adding re-agents, precipitates urea from the blood, those re-agents entering into union with the substances with which the urea was combined; but in the natural process, the kidney adds nothing, either acid or alkaline,—effecting the decomposition by its own structural arrangement, or by the energy of some substance contained in it, which, without participating in any new forms of combination, produces decomposition merely by its presence.

Is then *the presence* of a third body sufficient to loose the bonds of union of two others? Is it an error to suppose, that chemical decomposition cannot be effected except by a replacement of elements?

From the extensive bearing of this question, both upon physiology and the practice of medicine, the scientific chemist will foresee how much hangs on its decision:—if we affirm, that the propinquity of one element can determine the combinations or decompositions of others, without participating in the change itself, we strike at the very basis of the doctrine of affinity. It is with an impression of the importance of these considerations, that Berzelius has recently enumerated certain cases of an action, not comprehended under chemical affinity. He has given us a history of a train of discoveries, which place beyond all manner of doubt, the fact, that the mere presence of one body may cause changes in the mode of union of others, without at all participating in them itself. Of such a character was the observation made by Kirchoff, that dilute sulphuric acid had the power of changing starch first into gum, and next into sugar, without adding any thing to, or taking any thing from the combination. More recently, an action of the same kind brought about by the same acid, has been detected in the conversion of alcohol into ether; it is not the abstraction of one equivalent of water from alcohol, which effects its etherization, but the mere presence of sulphuric acid. A whole class of bodies exercise the same effect, on the persulphuret and peroxide of hydrogen, producing decomposition, and not acting as elements of the new compound. But perhaps the most marked example of this action, is when a jet of hydrogen falls on spongy platina, under exposure to the atmosphere; the platina determines combustion, and the formation of water. Iridium enjoys a similar property, and what was at first supposed to be a peculiarity as respects platinum, is now known to be common to an extensive class of agents. The operation of yeast in disuniting carbonic acid and alcohol as constituents of sugar, cannot be explained by any chemical reaction of the elements concerned, any more than the action of diastase in the transformation of starch into sugar, or the change of alcohol into acetic acid by disintegrated pla-

tinum. Results like these, bearing a marked comparison with the usual play of chemical affinity, ought to be recognised by distinctive appellations. Berzelius proposes to designate them as *catalytic actions*, and the forces bringing them about, *catalytic forces*—terms which are unobjectionable.

It is at once curious and well worthy of remark, that the very first group of catalytic results with which we are acquainted, form a complete series of chemical transformations. By the action of sulphuric acid, lignin or the fibre of wood may be transformed into gum; and this, by the aid of heat, into sugar; sugar, by the action of yeast, into gluten; and a variety of animal and vegetable matters are converted into alcohol. Alcohol, by the action of disintegrated platinum, is converted into acetic acid. Here, then, is a series of results brought about by catalytic action, commencing with the transformation of the fibre of wood, and ending in the production of vinegar. Variations in this series might be mentioned: instead of lignin, starch might be taken, which may be changed by diastase into sugar, and this again successively transformed into acetic acid. Now, each one of these substances is generally met with as the produce of organic action; and indeed almost all the catalytic results known, end in the production of bodies allied to the organic kingdom. The strongest affinities may thus be overcome; and the electrical forces which hold together dissimilar particles may be so completely antagonized, that decomposition shall result. It is thus that, at certain temperatures, iron disunites the elements of ammonia, without combining with them; whilst in vessels of earthenware or glass they bear a much higher heat without disturbance. It is thus also that the presence of any metal determines the evolution of aqueous gas from water at 212° Fahr., when the same phenomenon in a vessel of glass does not happen until the temperature has reached 214° F.

Perhaps it might be premature to restrict the action of these forces to the production of organic matters. Do not circumstances lead us to extend their influence much further? how else shall we explain the action of an incandescent wire in producing the detonation of explosive mixtures and determining certain modes of combination. These forces have the power of controlling the action of chemical affinity, and often of overcoming it. The peculiar condition that bodies by their aid induce changes in which they do not participate, and those changes being often identical with the results produced by organic life, point out features of resemblance in actions too well marked to be misunderstood. There are cases, moreover, where we have absolute proof that organic operations commence with catalysis, as in the accu-

mulation of diastase which surrounds the eye of a potato, through which the starch of the tubercle becomes converted into gum and sugar. Now, as is observed by Berzelius, it is not probable that the action mentioned is the only one of its kind in vegetable life; on the contrary, it may be presumed, that in vegetables, as well as in the animal body, a thousand catalytic effects take place between the tissues and the liquids, whence result the great number of different chemical compounds, the production of which, from the same brute matter which we call blood or vegetable juices, cannot be explained by any other known cause.

As the combinations resulting from catalysis obey the laws of definite proportions, we have abundant indications that, in a manner analogous to chemical affinity, these forces are manifestations of the electro-chemical relations of matter; and perhaps hereafter we shall be able to trace both as modifications of a common cause. The scanty number of facts hitherto recognised, and our want of knowledge of all the circumstances of the phenomena, do not warrant us, however, at present, in forming any decisive opinion. It is highly desirable that medical chemists would bend their attention to the subject, in order to increase the little stock of information we possess.

Pore-action is unquestionably a catalytic phenomenon,—a manifestation of that power, in one of its most complex cases, where structural arrangement is called into operation to give a distinct modification to the impress of chemical power. The walls of a pore have a decisive action due to their chemical constitution, but the shape and magnitude of the pore itself exercises a modifying influence equally great. The resolution of the problem of pore-action will divide itself, therefore, naturally into two parts: to determine the mechanical effect of the walls of all pores in general — the catalytic action of pores of different chemical constitution. These would lead to a physical determination of the general laws of equilibrium and motion of fluids moving through tissues and in glands, and point the way to the widest of all fields of physiological research.

All organic masses engaged in secerning action, essentially consist of a tubular arrangement. In some, the length of the tube becomes small in comparison with others, and there results a conglomerate system, spread out like a sheet or thin tissue, as is the case with the membranes; but, the mode of action in both instances is probably alike,—the particles of which the walls of these tubes consist, by some direct action upon the liquids they are in contact with, bring about changes strongly resembling the results of chemical affinity, and yet differing essentially from all kinds of chemical phenomena. There

is no problem whatever of more absolute importance to physiology; no question whose solution is more desirable, than to have a full knowledge of the statical laws by which pores act. It would reveal to us a thousand of the mysteries of organic life, and would lead us at once to the chemistry of vitality. Vegetables and animals consist alone of pores of variable length; each organ is a system of such pipes having actions of its own; yet, of the laws which solicit the movement of fluids in these pipes, and which bring about chemical decomposition, we know nothing. Of the conditions of their equilibrium we are equally as ignorant as we are of their dynamical laws. It was anciently so with the system of the world; sympathies and antipathies explained the action of one distant orb upon another, and the intricacies of their motions were explained by likening them to the vibration of a musical cord. Physiology has not yet arrived at its Newtonian era.

There is, I repeat, no problem of greater interest to medical science, than that which relates to pore action, and the motion of liquids in narrow cylinders. Confessedly the laws of inorganic chemistry are utterly inapplicable to the phenomena of life. Chemical affinity has only a subsidiary action here, and that to a very limited extent; it is another kind of chemistry that obtains among living things. All this complicated frame is made up of pores of various diameters and various lengths, each system of which has actions of its own; how important then it is to understand the laws which all these systems obey, and the specific modification there is in each distinct discerning organ. Aided by such knowledge, with how much more confidence should we not approach the bed of sickness, and administer remedies, of whose mode of action we had some idea. Vitality, the recuperative forces, sympathy, antipathy, trains of morbid associations, and a thousand other obscure expressions which darken counsel with words without meaning, would vanish from medicine; and where all is obscurity and falsehood, all would be light and truth.

Nor should we alone know what is the normal condition of an organ, and what the true mode of restoring it when in disease. Physiology and the practice of medicine would not only reap the benefit of these investigations; they would also corroborate and substantiate the discoveries of the microscopic anatomist. Nay, more, they would teach him beforehand what kind of structure he might expect to find, for structure could be predicated from its effects. A watch, or other delicate machine that has stopped, might perhaps be made to move again by the rude jolting and shaking of a most ignorant man; but to find out the cause of its derangement, and to reinstate it fairly and

without damage in its former integrity, requires one who knows its springs and wheels, their reciprocal action on each other, and the end they are to accomplish. We might perhaps smile at the rough attempts of such a pretending mechanic; but when we reflect that all the operations of our own science as physicians are carried on upon principles that are empirical, and directed to act upon organs whose offices and modes of action are for the most part unknown, the verse of the Roman poet may not be without application:

“Quid rides? mutato nomine de te,
Fabula narratur.”

On the importance of extending our knowledge of these actions, I need not insist. The fabric of the living body presents us with a series of catalytic and capillary actions, from the *monas termo* up to man. Where is the plant, the tree, the animal, that does not furnish us with a crowd of problems of deep interest, and all of this class? Whilst philosophers have succeeded in tracing the phenomena of excited amber, or of the magnet, to their last cause, and have reproduced a series of results striking and impressive, they have neglected the study of pore action and capillarity. It is true that of the latter we are possessed of a mathematical theory, which gives us expressions of a large series of facts, but it is to the experimental chemist that we are to look for a history of the causes which bring about a development of simple vesicles into compound structures; he must furnish us with a theory of the functions of tissues and their decomposing powers. Parting from the mechanical doctrines of the conditions of equilibrium and movement, he must give us instruction into the play of tubal arrangements—must develop to us their catalytic action, and teach us how capillary systems act and react on one another. Until all this is done, we are to look upon the science of life as imperfect; and surely there is no problem whose resolution is more seductive, or will confer greater benefit on the human race, than this: it is the fundamental problem—the keystone of physiology.

Of how many millions of pores and tubes are not our organs composed? and yet we are in utter ignorance of the action of these arrangements. Some vague ideas of filtration, and straining, and percolation, are all that we possess. Our philosophy would teach us that there is but little difference between a man and a sieve. We forget the uniformity of discerning action—the production and invariability of definite compounds. Conceal it as we may, there is a chemistry of life, and of that chemistry we know nothing.

It has sometimes happened to me to hear well educated physicians deplore the narrowness and obscurity of our physiological views.

They forget that this arises from the course of investigation which we have pursued. We have attempted to solve the highest and most difficult problems, without a knowledge of the very data of the science. What was astronomy, so long as its cultivators employed themselves in developing its more intricate and complete phenomena? The motions of the stars, beings that seemed instinct with life, were involved in cycles and epicycles; the appearance of a comet struck terror into nations, and the occurrence of an eclipse was the harbinger of the dissolution of empires. But Newton began with investigating the fall of an apple to the ground; and, tracing up the conditions of that humble experiment, finally reduced all these intricate gyrations to simple laws, and showed that these complex evolutions were the result of a harmonious motion. So, too, physiology must begin with the philosophy of pore action: the doctrines of change by presence must be developed, the action of tubal systems must be discovered; and then, and not before then, it will take rank as an exact science.

Hampden Sidney College, Prince Edward Co., Va., Sept. 1837.

ART. VIII.—*Case of Worms in the Urinary Bladder.* By HARVEY CAMPBELL, M. D., of Johnstown, Windham county, Conn.

I am induced to offer the particulars of the following remarkable case for publication, from having noticed in the thirty-ninth number of this Journal, the details of a somewhat similar case by Dr. Brigham of Hartford, wherein he asks, ‘are not such cases more frequent than is generally supposed?’ In July, 1825, I was called to visit Mr. John Hunter of this town, aged 67, who for three or four years had been affected with slight and occasional interruptions to the flow of urine, which, for the last few weeks, had increased in severity, causing great pain in evacuating the bladder, and which now amounted to an entire obstruction. Until the time I visited him, he had taken nothing but a few domestic remedies of his own prescribing, which, until very lately, had procured relief. I immediately evacuated the bladder by means of the catheter, and, on withdrawing it, I observed a very small red-headed worm sticking to the end of the instrument. This worm was about half an inch in length; its body was made up of numberless minute cartilaginous rings, and supplied with a number of legs, arranged in two distinct rows from one extremity to the other. The catheter was employed, daily, for about three weeks,

during which time some thirty worms of the above description were passed, some through the instrument, others were found sticking to it when withdrawn, and a few were observed to pass the urethra, after the use of the catheter was dispensed with. By the regular daily evacuation of urine, and an appropriate use of the terebinthines, in about one month the bladder was apparently divested of its vermicular occupants, and restored to its former healthful tone and action. This case is less calculated to excite our wonder from the consideration, merely, that worms inhabited the bladder, than from the reflection that this viscus, and its contained urine, so apparently unfitted for such an occupancy, that it will almost stagger credulity herself to believe the fact, should become tenanted with animals of the description here given. These worms belong to a hardy race. They were hard, very active, strong and wonderfully tenacious of life. Nitric acid would destroy them in two minutes, but they would retain all their activity and energy when immersed in oil of turpentine for the space of two hours. I enclosed two of them in a quill which I carried in my pocket, intending to ascertain the length of time they would live in such a medium. At the end of four weeks they were as lively and vigorous as ever, but how much longer they would have thus lived I have no means of knowing, for while exhibiting them to a friend in the open air they were blown away by the wind and lost, and here my experiment terminated.

I am not aware that there are many cases of worms in the urinary bladder on record. That worms of the description here given should exist in that organ and be capable of surviving for such a length of time in so many different and adverse media, some of which are apparently the least capable of sustaining life, must be new to many members of the profession. Indeed, it almost surpasses belief that a worm generated in the bladder and existing in the urine, which must be considered its most natural element, should be capable of retaining life and vigour for the space of four weeks, when enclosed in a quill containing nothing but atmospheric air. Nature seems to have departed from her ordinary rules in this and similar anomalous cases, and we are left to wonder and admire at what we cannot elucidate or explain. I am not naturalist enough to designate the genus or species to which these worms belong in the animal creation, but I very much doubt whether worms of a like character have ever before been known to generate or exist in the living human system. But although they have not been *known* to exist, still they may have existed frequently and passed away unobserved; and in the case before us, had it not been for the necessity of employing the catheter, these

same worms might, from their diminutiveness, have passed off unobserved. It will be observed that in this case and all others upon record, where worms have been found in the bladder, that symptoms like those of stone have prevailed,—irritation at the neck of bladder, difficulty and pain in making water, and in the case of my patient, a total obstruction of urine. A diseased condition of one or more of the urinary organs is undoubtedly requisite to the formation of worms. The diagnosis must be obscure and difficult, and cannot be determined except by ocular demonstration.

I should consider the prognosis favourable and the therapeutic indications simple. Dr. Brigham attributes the removal of the worm, in the case detailed by him, to “the disturbance of it by the repeated and thorough examination of the bladder which he made a few days before it passed.” To the same cause, more than any other, do I attribute the removal of the worms in the case of my own patient, as the catheter was employed daily, and no other means made use of, excepting that diuretics was administered, consisting chiefly of bals. copaivi. Independently of the supposition which I believe and adopt, that the worms were originally formed in the neck of the bladder, the position of this viscus, with the aid of gravity and the frequent passage of the urine, all contributed towards concentrating them at this point, where, by the repeated introduction of the catheter, they were disturbed and loosened from their attachments, to be carried off with the urinary discharge.

In an obstinate case, injections of oil of turpentine, or some other perturbing liquid, frequently thrown into the bladder, as was practised in the case detailed by Mr. Lawrence in the *Medico-Chirurgical Transactions*, would undoubtedly hasten the removal of the worms.

Although the urinary bladder would seem to be a very unnatural location for worms, and the urine, from its chemical properties, would appear to be a medium very inauspicious to their growth and development, yet as they have been known to exist there, and to have caused symptoms like those of gravel and stone, and been productive of inflammation, irritation and spasm, in the neck of the bladder, &c.; add to this the consideration that worms, especially small ones, may be evacuated from the bladder without the knowledge of the patient himself, or, if known to him, the fact may still be unknown to his physician or any one else; and in the case related by Dr. Brigham, there is no evidence from the account that his patient made any one acquainted with the fact, that two worms were once expelled from her bladder, until twenty-one years afterwards, when she expelled a third, but for which, one case at least of this rare and singular malady

would have never been reported. Add to these considerations likewise the fact, that within a period of twelve years two cases of this disease have been detected in a single state, one by Dr. Brigham and the other by myself; and I think we are fully warranted in the belief that this disease is more frequent than is generally supposed.

The profession in this country are generally too negligent in making reports of anomalous and instructive cases. There is no physician of experience, from Passamaquoddy to St. Mary's, who has not met with many cases of disease, which, if correctly reported, could not fail of advancing the interests and usefulness of the whole fraternity.

Voluntown, Conn., Aug. 24th, 1837.

ART. IX. *Case of Rupture of the Urethra without external wound.*

By SAMUEL WEBBER, M. D., of Charlestown, N. H.

I was requested, on the 6th of May, 1829, to visit E. Harlow, a farmer in the adjoining town of Springfield, Vt., and to take with me some catheters of different sizes. Upon my arrival at the place, I found Drs. Cobb and Crane in attendance, and learned from them that the patient, on the afternoon before, while standing upon the top of a rail fence, had slipped and fallen with a leg on each side of the fence, receiving a severe bruise in the perineum. He had not passed water since, and was now suffering severely from the retention.

Upon examination I found the scrotum and perineum somewhat swollen and discoloured, with much tenderness. I selected a middle sized catheter and attempted to introduce it into the bladder. After passing it a little beyond the arch of the pubis, the passage was impeded, and it required considerable manœuvring to overcome the difficulty. I was finally successful, though when the instrument passed on it conveyed a sensation as if it was passing through some soft mass like coagulated blood, instead of along a free channel. Farther on, near the neck of the bladder, the difficulty was renewed, and being fatigued by a hurried ride and long stooping over the patient, I committed the instrument to Dr. Crane, who, after a little while, succeeded dexterously in passing it into the bladder. The urine was freely evacuated, and the patient appeared much relieved. Agreeing with his attendants upon the propriety of the antiphlogistic treatment proposed, and leaving the catheter with them for future use, I then took my leave.

Four days afterwards I was again summoned in haste. I found the left side of the scrotum enormously distended, slightly purple in colour, except at the lower part, where there was a black spot, of an oval shape, and from half to three-quarters of an inch in diameter, evidently in a state of gangrene. The patient was in great pain, and I suggested to Dr. Cobb, who was in attendance, the propriety of immediately opening the scrotum. He consenting, an abscess lancet was freely passed through the black spot, which gave vent to a pint of thick black fluid, of a very fetid smell, and apparently composed of a mixture of putrid blood and urine. I found, upon inquiry, that the urine had been drawn off regularly twice in the twenty-four hours, but that the enlargement of the scrotum had come on a day or two after my former visit. The patient had, several times after that, made attempts to pass water, without voiding it, though he experienced the feeling of its passing from the bladder. Hence I concluded that, by the fall, an opening had been made from the urethra into the scrotum, and in these attempts the urine had passed into the latter. This was ascertained by passing a catheter into the bladder, and introducing a probe through the opening in the scrotum; the probe being thus made to touch directly upon the catheter, a little behind the pubis. The catheter was left in the urethra, the scrotum enveloped in a fermenting poultice, and the patient put upon a light nourishing diet, with quinine and wine in small quantities. In two or three days the slough on the scrotum separated, without having increased in size, and by means of the large opening it left we could plainly see the silver catheter shining through a ragged opening in the urethra about half an inch long. The edges of this opening were slightly touched, two or three times, with nitrate of silver, introduced through the scrotum by means of a quill, and in about a fortnight became united firmly. In a week more the opening in the scrotum also closed, and the patient resumed his usual pursuits.

Charlestown, N. H., August, 1837.

REVIEWS.

ART. X.—*Surgical Observations on Tumours, with Cases and Operations.* By JOHN C. WARREN, M. D., Professor of Anatomy and Surgery in Harvard University, and Surgeon of the Massachusetts General Hospital. 8vo. pp. 607. Boston: Crocker & Brewster. 1837.

Mr. John Bell, in his introduction to his surgery of tumours, has urged the very appropriate injunction, to disregard no tumour because it seems harmless; "for never is such a disease more dangerous than when the patient is dismissed with some trivial prescription, and referred with dark and doubtful prediction to 'the coming on of time.' Allow no poor petitioner for your advice to depart without some share of notice, for the tumour which he hides under his side-lock or cravat is, perhaps, at no distant period, to cause his death; never, unless for special reasons in consultation, or otherwise assigned, suffer a tumour to grow uncontrolled, unless it be seated merely in the skin, or under the skin, for in every other part it endangers life." The importance of the advice here given, and the fatal consequences resulting from a neglect of it, must have been felt or witnessed by every one engaged in extensive practice. There are perhaps few such, who, on reviewing their experience, cannot call to mind instances of tumours, at first deemed trivial, which by neglect had grown in importance, until by their encroachment upon parts essential to life, or their ravages upon the organization, they assumed a condition putting all the resources of art at defiance, and marching with relentless strides to a fatal termination. Yet there is, perhaps, no part of surgical pathology and practice so much neglected; and notwithstanding the daily occurrence of such morbid developements, and the several attempts which have been made to portray the distinctive characters of each, every one, much conversant with surgical practice, must be constrained to confess, that as yet we possess no indications, in very many cases, by which the harmless can be distinguished from those of a malignant character; that the information we have acquired relative to the pathology of many tumours is extremely meagre and unsatisfactory; and that surgeons of the most acute judgment, and extensive experience, are often embarrassed in deciding upon what cases should be submitted to an operation, and what left to run their course, as being of a nature not to be controlled by art.

These considerations are well calculated to excite an interest in every attempt to shed new light upon a subject of such vital interest

to humanity. It was, therefore, with no ordinary feelings that we opened the work which forms the subject of our remarks, and we are satisfied that our readers, in common with ourselves, will hail with extreme gratification, a work on a subject of so much importance, emanating as it does from one of the most distinguished and experienced surgeons of our country, and containing the results of his own observations.

Our author, in his preface, informs us, that while it was not his intention to make a compilation from books, he has not, designedly, omitted to avail himself of the labours of the able and distinguished men who have done so much for the advancement of this branch of science. He also informs us, that in the execution of his task, he has been led to introduce such general remarks as were necessary to connect together the histories of particular cases, and to these, a concise account of the treatment applicable to each disease, has been added.

In the introduction, the author offers some judicious remarks on the causes, diagnosis, and classification of tumours, but which we have to regret are altogether too brief to furnish adequate information upon these topics. The most simple idea of a tumour, he represents to be, "an unnatural enlargement in some part of the body." "But," he subjoins, "is this enlargement an increase of a natural part, or a new formation? If the former, we might expect it to consist of a texture similar to that in which it originates. If the latter, how can we explain that the vessels of a part, should generate a substance different from that part?" John Hunter's definition, that "a tumour is a circumscribed substance produced by disease, and different in its nature and consistence from the surrounding parts," he considers the best, but liable to objections not easy to be obviated by any other that can be offered.

In relation to the causes of tumours, Professor Warren gives us no very satisfactory information. In order to insure their development, he thinks some peculiar state of the constitution is necessary, as in some individuals a blow will give rise to such an accident, while in another, no such consequence would follow. Effusions of lymph, he thinks, may prove a cause of tumours, but remarks that such effusions often take place, without any tumour being produced. Chronic inflammation is mentioned as another cause; but the author has refrained from entering into any disquisitions relative to the modifications of nutrition and secretion, which are instrumental in giving rise to such morbid growths. The hypothesis of Hunter, that a clot of blood, by becoming organized, may grow progressively, so as to form a tumour, is not entitled to confidence, and is not believed by enlightened pathologists of the present day; nor does it, in our opinion, derive any weight from the case cited by our author, in which a clot of blood was found encysted in the centre of a tumour of the mamma. Upon this subject, we may state, with a recent writer, in general terms, that the concurrent conditions of a tumour are: 1. A certain morbid productive power. 2. A material possess-

ed of this formative faculty. 3. A collection of fluid poured out by the part: and 4. A change of relative position. Some, or all of these conditions, are present in every tumour; and, reduced to their ultimate element, they will be found to be referrible to some modification of nutrition or secretion, or both, which has its origin in a change of the vital properties. What this latter is, cannot be certainly ascertained, but it is probably as variable as the products to which it gives origin.

The author, while he admits that valid objections may be urged against the method he has pursued in treating his subject, prefers the plan of considering tumours according to the textures they affect. He does not, therefore, attempt any scientific classification of these productions; but beginning first with tumours affecting the textures of the skin, he takes next those of the cellular membrane; then the muscular, the fibrous and osseous; the glandular, the vascular, the mucous, serous, and synovial; and, finally, tumours composed of different textures, and not found exclusively in any—the encysted. These subjects are treated in fourteen sections, composing the body of the work; the last of which is appropriated to tumours of the abdomen.

The first section is devoted to the consideration of epidermoid tumours, under which head the author enumerates *verruca*, *clavus*, and *ichthyosis cornea*. The first, or wart, we shall not notice; and clavus, or corns, may by many be deemed too unimportant to deserve attention. There are, however, few diseases of such apparent insignificance, that entail so much suffering. We are induced to make a passing remark on the subject, in consequence of the following case. A lady was affected with inflammation of the foot, supposed by her to be brought on by taking cold from wetting her feet.

"After visiting her once or twice, a small aperture was seen on the upper part of the first joint of the great toe, and a fluid issued from it, which seemed to be a mixture of pus and synovia. The skin was indurated and thickened."—p. 17.

The discharge which took place in this case, the author thought proceeded from the cavity of the joint, in consequence of a communication having formed with it. We would suggest a different explanation. Two or three years ago, while engaged in some investigations relative to the pathology of the epidermis, as connected with the morbid alteration now under consideration, we discovered beneath each corn, and directly over the knuckles of the affected toes, a small subcutaneous bursa, consisting of a perfectly closed sac, smooth upon its inner surface, which was lubricated by synovial fluid. These bursa were precisely similar in appearance to those which are found beneath the skin over the patula, the olecranon process, and the greater trochanter. This pathological fact, which at the time we considered new, we have since found noticed by some of the older writers; and in subsequent investigations we have found, in almost every instance, that corns seated over the joints of the toes, have such bursa beneath them. It is, doubtless, owing to this arrangement, that such productions are often so exquisitely painful; the pressure of the hardened

epidermis having a tendency to rub the opposite surfaces of the subjacent sac against each other; and thus keep up constant irritation and inflammation.

Ichthyosis cornea consists in the production of horny tumours, or excrescences, from various parts of the body. A respectable woman from the country, thirty-five years old, was affected with tumours of this kind, from the size of a pea to that of a body an inch in length, and three-quarters of an inch in breadth. She had two or three on the forehead very large, and some small. They appeared like conical horns forcing their way through the skin, surrounded by circles of a red colour, while the rest of the skin was pale and delicate. The horns were constantly falling off, and regenerating in the same places, while new ones also appeared in other places. She had been married; was the mother of children; but never had any venereal disease. She had suffered from disorder of the digestive organs; was feeble; but kept her bed rather from weakness, than from stiffness of the limbs. She finally went into the country, and died. The disease, our author thinks, is incurable.

Tumours of the dermis are arranged under three heads, *Lepoides*, *Keloides*, and *Eiloides*. Of these, some are considered malignant, while others possess no such character. Professor Warren remarks, that there are two classes of malignant diseases which are well known to be of that nature: they are, *carcimona* and *fungoides*; the most striking character of the first being *hardness* and *ulceration*; while the second is distinguished by softness and bleeding. Melanosis, he states, he has seldom found to possess a malignant character, and this accords with our own observation, although we have seen several exceptions.

Lepoid* tumours are characterized by a "scaly crust, or bark-like roughness of the skin. The scale of the cutis is most commonly seen in the face, especially of aged persons. It is an irregular tough crust, of a brown colour, which might be mistaken for a wart." It first appears like a discoloured speck, or piece of earth; this falls off, and is renovated in the same form, for many successive years. Sometimes the detachment of the crust exposes a new cuticle beneath, which gradually thickens. Occasionally the denuded surface exhibits a spicular aspect, and throws out an ill-conditioned pus, which dries in form of irregular scales. It may finally ulcerate, and form an incurable sore, or cancer of the face. Its tendency, however, is to advance slowly, without much pain, and without contaminating any parts, but those in contact with it. The proper remedy, our author thinks, is extirpation; and this may be done either by the knife or caustic. The former should be preferred; but the arsenical paste, powdered nitrate of silver, vegetable caustic, or the potassa cum calce may be employed. The last is preferred by Professor Warren. It is applied in the manner usually resorted to for establishing issues.

Several cases of the disease are detailed by the author, but we shall

* *Astz*, Bark.

be obliged to pass them over. Plates I. and II. furnish examples of two of these. In one of them, the disease was seated by the side of the nose, involving the eye. In the other, it was situated over the knee, and formed a tumour of a circular form, three inches in diameter, and one inch in thickness.

Under the title *keloides*, the author has placed three varieties: "1. A white permanent elevation of the skin. 2. The spider like pimple of the face. 3. The *keloides* of Alibert," by whom this term was applied to a production of the skin, having red vascular processes extending from the tumour, and giving it the appearance of crabs' claws.

The first variety resembles the cicatrix of a burn. There is an elevation of the skin without any discoloration, except a slight one at the margin; nor is it sensible or painful; but it is remarkable for its disposition to grow after extirpation, and for the difficulty experienced in eradicating it. It occurs in disordered habits, after operations for the removal of small tumours; as a consequence of injuries inflicted upon the skin; and sometimes without any manifest cause. Such tumours, we have observed, are much more apt to occur in negroes than in white persons, and in such persons they have been known to follow the pustules developed by tartar emetic ointment. A few years ago, we removed a tumour of this kind from between the ear and the side of the head of a negro: in a short time it was reproduced. We again removed it with the greatest care, dissecting away all the adjacent skin and cellular tissue. In a few weeks, the tumour was as large as before, and presented the same appearance. Such tumours are smooth and glossy upon the surface, and of a firm fibrous consistence. They have nothing of a malignant character; and although liable to recur, as was the case in the individual just mentioned, they may sometimes be extirpated with entire success. Professor Warren has given cases in which they did not return after having been carefully extirpated.

The second variety of keloid tumour, mentioned by our author, is a small red pimple, appearing most commonly on the face; radiating red processes into the surrounding skin. At first there is no pain, or any uneasy smarting; but after it has continued for years, it assumes a prickling, and finally a burning pain; increasing in size, ulcerates, and assumes a cancerous character. This change, however, only takes place in advanced life, and probably never in children or young adults. Such tumours should be removed by the knife or caustic.

The third variety, according to Professor Warren, is a more troublesome and dangerous disease.

"Like the first, it resembles, in the early stage, the scar of a burn. In colour it is more red than the surrounding skin, and shoots out red vascular processes, which give it the crab-like form. The elevation is not great in the common form of the disease. It is sensible to the touch, and is attended with a burning pain. The parts which are most frequently its seat, are the back, shoulders, and neck. On dissection it exhibits a white fibrinous appearance, much like the scirrhus-cancerous deposit in the female breast. The most remarkable fact about it is the disposition to regenerate after removal. This may happen a number of times; and eventually it may ulcerate and become a malignant sore.

The following is a case of true keloides. Miss B——, of Worcester, six years since perceived a small rising of the skin on the left shoulder, accompanied with a stinging, burning pain. This tumour increasing gradually, she had it cut out. As soon as the wound healed, the rising of the membrane showed that the disease was regenerating. After some time it was again removed, and the edges of the wound brought together by three stitches. When it again healed, the same disposition to a rising showed itself. The tumour, when I first saw it after the second operation, was about two inches long and half an inch wide; of a slightly red colour; raised from the surrounding skin like the scar of a burn, and a small red projection extending from its edge. A burning and shooting was felt in the parts. At each of the points where the needle was passed through, there was a little rising, similar to the first, and about the size of a pea's head, and quite red. So that instead of one tumour, there were seven."—pp. 44, 45.

Eiloides is a term applied by Professor Warren to a spring of tumour, presenting the appearance of coils, like those of a rope.* This seems to be a rare form of disease, and the author remarks, that he had only witnessed a single example, that which is delineated in Plate IV.

"It is a true production of the cutis, and continues so throughout its growth, although it may become very large. The first appearance of it is, an elevation of the skin, similar to that from a burn—without pain, redness, hurt, or ulceration: it increases to a great size, and ultimately effects the patient's health. If removed, it is reproduced. A scrofulous habit seems to predispose to it."—p. 48.

The tumour observed by the author, presented the appearance of a triple coil of inflated intestine, each roll being four inches long, growing by a narrow base from the side of the neck. The subject of it was a negress, aged 15 years, and at the time of applying for advice, she was not much disordered in health, although she had not been perfectly well. The tumour was carefully removed by Professor Warren, but returned, when refusing to operate a second time the tumour was again extirpated by another gentleman. It was, however, shortly reproduced, grew rapidly, and the patient's health failing, she died dropsical. The lymphatic glands of the abdomen were found enlarged, and the liver diseased.

A case of the same kind, our author suggests, is that of Eleanor Fitzgerald, reported by John Bell. Another has been described in one of the volumes of the New York Medical Repository, and we have ourselves seen one. The records of the science contain several similar examples. The character of such tumours, does not probably differ, pathologically, from the keloides already described. In both affections, the skin is the primary seat of the disease; they are both prone to recur when extirpated; and in the one, as in the other, the diseased mass is of a firm, fibrous consistence, with which the skin is identified.

We shall pass over the next section, which treats of tumours of the cellular tissue, as it contains nothing requiring comment or particular notice. The tumours mentioned, are the adipose, cellular, and painful subcutaneous tubercle. A very distressing example of the last disease is mentioned, in which the health of the patient suffered so much as to demand amputation, by which he was finally restored to health. An example of common steatoma, is mentioned by the

* From *Eιδω*, to coil.

author, weighing upwards of twenty pounds, which was removed from the back of the neck, by Dr. Miller, of Providence.

The next subject noticed, is muscular tumours. These are less common than those of the cellular and osseous textures, and the diagnosis is often difficult. Such tumours are generally less moveable than those which are seated in the cellular tissue, and their outline is not so well defined. Their mobility is always least when the muscles are firmly contracted, and greatest when they are relaxed. They of course differ greatly in their character; but our author has confined himself in the cases which he has detailed to those of a melanotic scirrhus and fungoid nature.

In the first case, there was a tumour of a melanotic character, seated in the substance of the rectus femoris muscle. It was as large as a hen's egg, and had existed six months. When the muscles were relaxed, it was moveable in a lateral direction; but it was perfectly fixed when they were contracted. It was free from pain or tenderness, and on examination after it was removed, it was found to be composed principally of hard, dark coloured, muscular substance; and its nucleus consisted of an osseous shell, an inch in diameter, containing a dark coloured fluid, and lined by a black crust.

The next is an example of scirrhus muscular tumour. A shoemaker, while holding a shoe against the breast, the shoe slipped under the pressure, and hurt him over the cartilage of the sixth rib. A small swelling was discovered next day, which increased in size, until, at the end of twelve months, it reached from the upper edge of the cartilage of the fifth rib, to the lower edge of that of the eighth, and acquired the breadth of six fingers to cover it vertically, and four to cover it transversely. Its breadth lay from the meridian line to the left, beginning from the linea alba. The tumour had the hardness of a periosteal tumour, but the skin exhibited no change of colour, being traversed merely by numerous enlarged veins. There was a degree of sensibility on the edge of the cartilage of the fifth rib, and at some other points. The tumour could be moved in a lateral, but not in a vertical direction, and there was a sensible pulsation, but no vibration. There was some obscurity in the diagnosis. It resembled osteo sarcoma, but wanted the hardness. Was it a disease of the muscles, or of the perichondrium? Might it not be a projection from an internal aneurism? Did it lie on the outside of the ribs, or might it not extend inwardly, as well as outwardly? for there was an obvious dip of the tumour below the edges of the cartilages, into the epigastric region. The opinion formed by Professor Warren was, that it was a tumour of the rectus muscle; an opinion derived from the first examination, when it was smaller and less hard than it afterwards became.

The operation was performed in the following manner:

The patient being placed on a table, an incision, seven inches long, was made from the fourth rib downwards, and the anterior face of the tumour was exposed by dissecting away the integuments. Its face being laid bare, exhibited a bluish colour, and was of a scirrhus hardness. Every stroke of the knife around it, was followed by a copious flow of blood. When the circumference of the tu-

tumour was uncovered, its edges were found to be quite undefined and concealed by the muscular connexions. These being cut through, I was able to discover an ill defined edge, and proceeded with the knife under this edge, and soon found I could detach the tumour from the faces of the cartilages; pursuing the dissection altogether by the touch, as the streams of blood and the hardness of the tumour prevented an inspection of the parts beneath. The operation proceeded favourably, till the tumour turned down over the cartilages into the epigastric region. Here it was obvious that if it involved the internal oblique and transversalis to the extent it did the external oblique and rectus, the incisions would penetrate the cavity of the peritoneum, especially if this membrane adhered to the inner face of the tumour. Such was found to be the fact. The two inner muscles formed part of the disease; the peritoneum adhered to it for about an inch, and not having the advantage of ocular inspection, it was of course difficult by feeling to make a nice dissection of the adherent membrane. This was, however, accomplished, and the whole disease was removed in one mass. Four large arteries, and many smaller ones, required ligatures. The patient suffered much when the tumour was raised, from its drawing the peritoneum outwards. This part of the operation was short, and as soon as it was concluded, he ceased to suffer severely. The wound was closed, leaving an outlet for the sanguineous oozing.

The patient had a smart fever after the operation, and a slight degree of peritoneal inflammation, which was relieved by two or three bleedings. His symptoms afterwards were perfectly favourable, and the wound healed in the third week.

On examining the tumour, it presented a cartilaginous hardness. Its surface on all sides was composed of the muscles between which it lay. Its substance consisted of a brownish texture, in which a multitude of granulations, the sixteenth of an inch in size, presented, with intermixture of a fibrous arrangement. At one point there was a softening, as if suppuration were about to begin. At another a dark red spot was seen. The internal or epigastric part was equally hard with the rest of the tumour. The surface of the cartilages was deeply depressed where the tumour had lain.

The obscurities of this case were not removed till after a careful examination of the tumour, and a consideration of the circumstances connected with it. The shining appearances of the external oblique muscle in a perfectly healthy state, though intimately connected with the tumour, showed that this was not the original seat of disease. The cartilages of the ribs were indented, but healthy. The internal oblique and transversalis were closely connected with the inner face, but quite apart from the tumour at its origin. The rectus muscle, on the other hand, was in the situation of the first prominence caused by the injury. The texture of this muscle was wholly absorbed in the tumour, and no vestiges of it remained. The tumour itself consisted of a mixture of granulated and fibrous organization, such as is seen in scirrhus tumours of various organs.—pp. 68-71.

A case of malignant melanosis is next described. The tumour was situated between the base of the scapula and spine, and involved the trapezius and rhomboideus muscles. Its centre was hard, and its whole interior as black as ink. The patient recovered from the operation, and went home apparently well; but about six months afterwards, the disease re-appeared, with the symptoms of a cancerous affection, and proved fatal.

Fungus hæmatodes of the muscles presents the same relentless character exhibited by this formidable disease when it attacks other parts of the body. Professor Warren details several cases, which fully confirm the truth of this assertion. In two of these, amputation was resorted to, but in only one with success; the disease having recurred in the other, and proved speedily fatal. In all the other cases a fatal termination ensued.

Under the title "Tumours of the fibrous texture of the tendons,"

we find a case detailed of too much interest in a therapeutical relation, to be passed over. The patient was a clerk, eighteen years old, possessed of great muscular power, who, in attempting to perform the feat of raising himself from the ground, while sitting with his lower extremities extended, injured the flexor muscles of the leg. No inconvenience was experienced at the time, but two or three weeks after the act, he perceived a weakness about the knees, and on examining, found a slight hardness along the tendons of the flexor muscles. He continued to move about, but the tumours and lameness increasing, having previously exhausted his faith in "bone and sinew doctors," he applied to Professor Warren for relief. A hardness of about four inches in length, and nearly an inch in thickness, was now found along the course of the tendons of the biceps muscles, principally seated on the inner edge of the tendon, and partly along its posterior face. When the muscles were contracted by an effort to raise the leg, the patient lying on the face, the tumour became of a stony hardness. When they were relaxed it was less obvious. No distinct uneasiness was caused by compressing the part; but the patient could not walk more than a few steps. After being informed of the difficulty of effecting a cure in such cases, and the necessity of great firmness and perseverance, on the part of the patient, the individual expressed himself ready to submit to the requisite treatment.

He was then informed that he must prepare himself for a confinement of at least a year, possibly of two years or more. He was directed to keep in a horizontal posture on a bed; the knees to be slightly flexed, and supported in this posture, and never to be moved, excepting passively. Twelve to eighteen leeches every fifth day for the first six weeks. Occasionally a purgative. No animal food, and the quantity of food limited. I heard no more from him for five months. He then sent for me. I found him pale and emaciated. He had severe pains in the bowels, and frequent bleedings at the nose. He had followed the course directed in every particular. I expressed my surprise that he should have undertaken to proceed so long a time, without giving me an opportunity of accommodating the treatment to circumstances. He apologised by intimating that being compelled to relinquish his occupation, he was without means of defraying more than the expenses of subsistence. From this time, I attended him regularly. I should have mentioned that the tumours were sensibly diminished. He was now directed to take a little meat twice a day: to drink from four to six ounces of wine, and forty drops of tincture of sulphate of quinine every two hours. Whenever the abdominal pains were urgent, to take thirty drops of tincture of opium. Under this management he recruited slowly; and at the end of four weeks the wine gave him head-ache, and was discontinued. Animal food was continued a month longer, and then, seeming to disagree with him, was omitted. He now resumed the original course, with the exception of substituting injections for purgatives, and sometimes taking a little meat. After eight months confinement, he was directed to use frictions of a stimulating liniment, and to have the limbs bathed twice a day in hot water and soap. Find the tumour lessening regularly, when he had been confined a year, I directed him to bandage the whole limb, and to get out of bed once a day. This was followed, after two or three weeks trial, with a thickening of the cellular substance between the hamstring muscles; in consequence of which he was put on the bed for a month longer, and then advised to get up and walk the room once a day. At the end of fifteen months, he was able to walk a quarter of an hour at once. I now urged him to walk out; but his apprehension of re-producing the disease was so strong, that it was sometime before this could be effected. At last he got

out, and increasing his walks very gradually, in three months he was able to walk to my house; and I had the satisfaction to find that all remains of the swellings were wholly dispersed. Since then he has recovered his strength, and is now perfectly well.—pp. 92-1.

The disease mentioned by the author under the appellation of "*Fungus non Hæmatodes*," is one which has always given us much embarrassment, in our attempts to give it a scientific location. He speaks of it as a vein tumour; in consistence soft; in extent variable; of a white colour; usually seated deep among tendons and muscles, and of a fungoid texture, breaking in pieces under a very moderate force. It is not painful in its early stage, but is malignant; recurring after extirpation, and ultimately proving fatal.

In many respects, the disease to which we have allusion, corresponds with the "pancreatic sarcoma" of Abernethy, but as we have witnessed it, is far more malignant than the disease he has described under that name. It wants the encephaloid character of fungus hæmatodes, yet it is not unfrequently associated with that disease. We have, indeed, seen tumours presenting in different parts of their substance, all the characters of the pancreatic and mammary sarcoma of Abernethy, and the encephaloid tumour of the French; and as they all seem to partake of a malignant character, there is reason to suspect, that they are all modifications of the same species of organization. A few years ago, we attended a respectable elderly gentleman, in consultation, who had a tumour of the kind described by Professor Warren, nearly as large as the head of an adult, situated over the sacrum. After death, it was found that the whole of that bone, with the exception of the first segment, had been completely destroyed by the disease. We are at present attending a lady, whose arm we amputated at the shoulder joint, about six weeks ago, on account of extensive degeneration and enlargement of the member. A tumour of the kind in question has made its appearance beneath the clavicle, and the glands of the neck have become enlarged, so that although the stump healed kindly, there is reason to fear the disease will extend.

In treating of exostosis, Professor Warren follows sir Astley Cooper, in dividing it into periosteal and medullary. In the first variety of the disease, he recommends excision of the bone, which has given origin to the disease, whenever it is practicable. But if the excision should involve the sacrifice of the limb, he thinks it would be better to try the experiment of removing the exostosis first. We allude to the following case, partly on account of the details of the operation, and partly for the reason that it was followed by symptoms of suffocation, resulting from the retraction of the tongue, after the division of the antagonizing muscles—an accident that has occurred after the operation for amputation of the lower jaw, in the hands of Richerand and Magendie.

The tumour was of two years growth, and was situated principally on the left side, extending from the first bicuspid tooth, on the right, to the branch of the lower jaw on the left, and including four incisors, the cuspidati, two bicuspides, and two molar teeth. The tumour

was prominent like an egg on the outside of the jaw, and extended through the substance of the bone to its inside. It was of a bony hardness; occasionally painful, and interfered with speech and mastication; towards the last, it had increased rapidly; the habit of the patient was thin, and her constitution delicate.

"The patient was placed in a common chair, with the head on the breast of an assistant. The lower lip being made tense, was divided at the median line, and the incision continued as low as the edge of the thyroid cartilage of the larynx. A shorter incision would not have allowed the dissection of the flap far enough back to have uncovered the jaw near its branch. The right flap was then raised sufficiently to expose the jaw under the first bi-cuspid tooth. The left flap was next dissected from the tumour and from the digastric region of the neck; including the muscles in the facial part of the flap; and in the digastric part, the skin, cellular membrane, and platysma muscle. The dissection was continued to the left as far as the edge of the masseter muscle; the facial artery was included in the flap, and was not divided. The stump of the dens sapientiæ and also the first bi-cuspid tooth of the right side, were then removed. This being done, a narrow bladed knife was passed behind the bone, corresponding with these two teeth, and the soft parts carefully separated from the jaw. Then the bone was sawed through.*

The bone having been divided, appeared quite loose. I therefore seized it with the left hand, and proceeded rapidly with the separation of the tumour from the parts connected with its internal face, and here divided the left submental artery, the only one which required a ligature. About to sever the lowest remaining muscles, I perceived the tongue drawn back into the pharynx, and the patient in a state of suffocation. Immediately seizing the tongue with the left hand, I drew it out of the pharynx, and confiding it to a friend, completed the section, and prepared a large needle and ligature to transfix and secure the tongue. This happily was not necessary. After waiting five minutes, the spasmodic action ceased, and did not return. The parts were then brought together and secured by six sutures, two of them being on the surface of the lip, one without, the other within. An aperture at the lower edge of the wound was left to drain the mouth and wound; and some adhesive plasters and a light bandage, with but little pressure, completed the dressing."—pp. 113-115.

It may be well to mention, that in a case of exostosis affecting the right horn of the os hyoides, of a sugar loaf form, and about three inches in height, the father of the author, the late Professor Warren, dissected the tumour to the bone, and sawed it off near its base, and thus succeeded in curing the patient speedily and effectually. In another case, the author himself had an exostosis springing from the transverse process of the seventh dorsal vertebra; he sawed through the transverse process with a narrow saw, and removed the remainder of the process with cutting pliers.

Several cases of medullary exostosis are detailed. In some of these amputation was resorted to, as the only means of affording relief. In speaking of a case affecting the jaw, the author makes the following remarks, which we think it useful to extract.

"In the early periods of my practice, I removed the bone in these cases with

* The saw employed was constructed for the purpose, and had the following dimensions: length, two inches; breadth, two lines; thickness, one-fourth of a line, handle, four inches long, rough and thick; end of the saw rounded. This is the best kind of saw that can be employed for this and similar operations. The chain saw and the bow saw cut more rapidly, but catch and cause delay and embarrassment. Heys' saw is slow and laborious in operation. The rotatory saws are unmanageable. I think a saw half an inch longer, that is, two and a half inches long, might have been better. The great difficulty in the use of the saw, in these cases, has led me to describe this simple instrument minutely, with the hope that it may be as useful to others as it has been to me. It is proper to have two or three of these saws, varying a little in dimensions.—p. 111.

the saw and chisel, and the operation was tedious and painful. In the year 1831, I first employed the cutting forceps, by which this operation was greatly facilitated. Since then, the ingenuity of my friend, Dr. Flagg, to which I have often been indebted, has greatly improved this instrument, in its application to the jaws. As the straight forceps are with difficulty brought to bear uniformly on the inside and the outside of the jaw, he gave to this instrument the hawk's bill form. One of these is made to cut vertically, and another horizontally, by which the two kinds of incisions are rapidly and perfectly made, and the patient suffers but little pain." —pp. 134-5.

The next subject we shall notice, is that of osteo-sarcoma. This is defined by the author, "a hard tumour, taking its origin from periosteum, or bone;" but when the author declares, at page 138, that "in all the instances of osteo-sarcoma, which have occurred in his experience, this tumour has appeared to have its origin in the periosteum, and not in the bone;" taking the results of our own observation as a guide, we should be at variance with him in our conclusions. We have certainly seen many cases of the kind mentioned by him; but in a greater number of instances, which we have had an opportunity of examining, the origin of the disease has been deeper seated—either in the reticulated texture of the bone, or, as sometimes happens, within its medullary cavity. The constituents of such tumours, he asserts, are then:—1. The bone on which the tumour is placed. 2. The periosteum, and 3. The medullary fungus, contained in the periosteum. To these must be added a fluid of varying consistence (most generally gelatinous) found in cells, in the interior of the periosteal cavity.

The first case detailed, is one of osteo-sarcoma of the lower jaw, in which the bone was sawed through near the symphysis, and disarticulated at the joint; one half of it being thus removed, the wound healed kindly, and the individual was afterwards "able to bite and chew completely."

The second case is one of osteo-sarcoma of the clavicle, (see this Journal for November, 1833, p. 17,) and is more interesting from its rarer occurrence, and the similarity it bears to one in which Dr. Mott, of New York, performed the operation of excising a portion of the clavicle, on a gentleman from Charleston, South Carolina. (See this Journal for November, 1828, p. 100.)

Passing over a very interesting case of osteo-sarcoma of the ribs, in which an operation was successfully performed, we shall next examine Section VI., appropriated to the consideration of "*tumours of the glands.*"

These tumours Professor Warren divides into three kinds:—1. *Tumours of lymphatic glands*; 2. *of secreting glands*; 3. *of mucous glands*; and suggests that a fourth division might perhaps be added, of tumours of *oleaginous* and *sebaceous glands*—tumours of the first set of glands are divided into scrofulous, scirrhus, and fungoid.

In reference to scrofulous tumours of the lymphatic glands, the author says but little; but in regard to scrofula generally, he makes the remark—one we fear which too many besides himself must acknowledge to be true—"that after many years' trial of the preparations of iodine, in various forms of scrofulous affection, I have rarely seen any very distinct advantages from it." Upon this point our experi-

ence is in accordance with his; and in this, as in too many other cases, we are pained to feel ourselves obliged to suspect, that numbers of the profession, in their zeal to increase the *argumenta medica*, or to gain a fictitious reputation, publish to the world statements in behalf of new medicines totally devoid of any foundation in truth. As relates to the present article, we may state, although not relevant to the subject of this paper, that we have within a short time administered iodine to a gentleman, in combination with starch, as proposed by Mr. Buchanan, in the Medical Gazette, to the amount of from fifteen to twenty grains daily, for a considerable time, without observing any effect on the constitution, either local or general, that could be with certainty referred to the remedy.

Scirrhus tumours of the lymphatic glands are either malignant or not malignant. The author has given cases illustrative of each form of the disease. That of Mary Litchfield, delineated in Plate IX., is an interesting example of the non-malignant scirrhus. This was a large tumour, occupying the right side of the face. From the zygomatic arch, it extended below the ear, which was raised by it to near the mastoid process; thence along the jaw to the chin, and thence upwards to the ala nasi; measuring around the base sixteen and a half inches, and from the ear, over the tumour, to the jaw, nine and a half inches. It was extirpated, and did not recur. This tumour is described as occupying the right cheek, yet in the plate it is represented on the left.

We extract the following case, as an instance of a difficult and dangerous operation, and in evidence of what may be accomplished by an operator versed in the anatomy of parts, and properly nerved by confidence in his own knowledge.

"Mr. S. H., a respectable farmer of Lincoln, was brought to me by Dr. Russell, about the first of March, 1837. He had a large tumour on the neck, extending from the spinous processes of the cervical vertebræ to the lower jaw, pharynx, œsophagus, and larynx, running upwards behind the ear, and downwards near to the clavicle. The patient, who was a healthy, good looking man, fifty-two years of age, told me the tumour had existed for thirty years. Within the last year it had increased rapidly; and of late had pushed his head to the opposite side; impeded the motions of the head and neck; caused dizziness, head-ache, and dyspnœa. On examination, I found it of a cartilaginous hardness, and quite fixed in its situation. The hardest portion extended from the origin of the sterno-mastoid muscle directly downwards, and there the patient said the tumour first appeared.

"After examining and considering the case, I conceived the following state of things to exist. Taking its origin in the lymphatic glands, behind the posterior edge of the sterno-mastoid muscle, it had extended backwards under the trapezius to the spine, and forwards under the mastoid to the pharynx. That it adhered to the splenius and complexus and trachelo-mastoideus, and involved the digastricus and all the styloid muscles. Of the blood-vessels, that it involved the external carotid artery, with its eight branches, excepting possibly the superior thyroid. Of the veins, the internal jugulars, and the accompanying branches of the arteries. Of the nerves, the three or four superior cervical, the par-vagus, sublingual and its descending branch, the glosso-pharyngeal, laryngeal, and probably the gustatory, and great sympathetic. Of the glands, the parotid and submaxillary. Of the canals and passages, the larynx, pharynx, the auditory passage, and possibly the œsophagus. * * *

"The patient was placed in a chair, with his head duly supported. My wish was to have secured the carotid artery first; but perceiving the depth of this ves-

sel from the rising of the hard tumour on the outside, and the trachea on the inner side, an incision was made from the spine to the angle of the jaw, to meet another incision from this last point downwards, in the direction of the anterior line of the sterno-mastoid muscle. The last incision extending down the neck near to the clavicle. The flap thus formed, was elevated by a dissection, laborious from the close adhesion of the integuments to the tumour. This flap being turned down, exposed the posterior half of the tumour, a hard, knotted, bloody surface, extending from the spine near to the trachea, and showing the mastoid muscle firmly imbedded in the scirrhus substance.

"Next, having dissected the mastoid from its inferior adhesion to the scirrhus, the carotid artery was exposed and tied.

"The superior flap of integuments was then raised, and I attempted to disengage the mastoid muscle from the furrow it occupied in the tumour, in order to pursue the dissection under it. This was found impossible. The alternative then presented of cutting across this muscle and dividing with it the accessory nerve,—the consequence of which last, I was unacquainted with,—or else dividing the tumour through its middle part, behind the mastoid. The latter course was adopted. The scirrhus mass was cloven in two. The posterior half was dissected out, and it then remained to separate and disengage the anterior part from the posterior face of the sterno-mastoid from the digastric, the nerves and bones; including the parotid and submaxillary glands. The mass of the tumour was then happily removed from the parts just mentioned. Some portions adhering to the fore part of the bodies of the vertebræ and to their transverse processes, could not be wholly dissected without exhausting the patient's strength. The operation was therefore concluded by the application of the actual cautery to the last mentioned parts, with very little complaint from the patient."—pp. 177-181.

The individual, as was to be expected after such an operation, suffered some unpleasant symptoms; but at the time of the last report, was recovering.

The author has treated somewhat extensively of tumours of the breast, under the several varieties of hydated, chronic mammary, cartilaginous and osseous, scrofulous, irritable, adipose, fungoid, and scirrho-cancerous tumours. To follow him through the various details of this portion of the subject, would lead to an extension of this paper beyond its proper limits. It may not be amiss, however, to extract the following brief description of the anatomical characters of scirrhus.

"Examination of the scirrhus tumour, after being taken from the breast, presents different appearances; in different subjects, and different stages. When I have examined a specimen of small growth, and at an early period of its existence, proceeding from the surface inwardly, and scraping away the fat of the breast, a number of white processes are seen radiating from the central nucleus. These at first seem to be mere cords, but on observing further, they prove to be membranous prolongations from the central nucleus to various parts of the breast coming to the nucleus itself, this is found to be hard and irregular, and requiring an incision. Cutting through this hard body, we find it grows more firm as we approach its central point, where its hardness is very great. On examining the section thus made, we find the circumference of the nucleus constituted by a membrane or cyst, which has different degrees of distinctness, and disappears at one part where its scirrhus substance is continuous with that of the breast. The substance within the cyst is composed of granulated bodies, intermixed with a white mass of fibrous aspect and radiated direction. In some instances, the colour of the contents of the cyst is dark. The hard nucleus after a time softens gradually to the consistence of paste. An absorption of a part of it takes place, and in the cavity thus formed, there is a fluid of variable colour, either reddish, purple, or black. The nucleus itself, I have seen of a black colour, and forming a melanosis."—pp. 239-240.

Professor Warren adverts to a very important fact, deduced from an examination of the several cases which he has detailed: viz.

"The great amount of internal disease compared with those external appearances, which are believed to be the original roots of the whole. In some instances, where the breast had been removed, there were in fact, no remains of external disease, while of the internal organs scarcely one seemed to have escaped its ravages."—p. 276.

The poison, he thinks, may be transmitted by absorption, or sympathy. Contamination by the first process is seen in the inflammation of the lymphatic glands. But the affections of the internal organs cannot be so readily explained in this way.

"If," says he, "we adopt the second hypothesis, that of sympathy, we should expect to find the uterus always diseased in scirrhus-cancer of the breast; also that the thoracic viscera would be more frequently diseased than the abdominal; which last is not the fact."—p. 277.

He suggests, as an inquiry in relation to this subject, whether the uterus is not the organ primarily affected in scirrhus-cancer of the breast? This, he thinks not improbable, and if once admitted, the amputation of the breast would be less frequently performed than it is now. But, notwithstanding, all difficulties resulting from the affections of the arterial organs, and the general constitutional contamination which attends this disease, the success obtained by our author, by the operation, viz. one in three, is sufficient to justify a resort to it.

With the following extract, showing the influence of hereditary predisposition, in giving rise to scirrhus-cancer, we shall close our notice of this section of the work.

"The following instances of hereditary cancer have occurred within my knowledge, to a family in this vicinity. The grandfather died of a cancer of the lip; whether others of his generation were affected, I know not. The son had a cancer of the breast, and, at the age of sixty, was operated on by my late father, but died of cancer some years after. Two of his sisters had cancer of the breast, were operated on, and ultimately died of the disease. A daughter of one of the ladies had a cancer of the breast, which I removed at an early period: she recovered, but died some years after of disease of the uterus. A daughter of the gentleman has a cancer of the breast, but declines any operation. I have reason to believe that other members of the family are affected, and conceal the existence of the disease."—p. 281.

The next subject discussed is tumours of the salivary glands. Two instances are mentioned in which the parotid was extirpated, probably only in part, as in the instance operated on by our author a salivary fistula remained after the wound healed. The other was a case in which the parotid was extirpated by the late Professor Warren, in 1804. In both cases the face was paralysed for a length of time after the operation. In the instance in which the author operated, while pursuing the deep dissection, the pulsations of the carotid were quite visible, and an assistant was requested to compress the common carotid, while the operator attempted to continue the dissection.

"In an instant the assistants, the operator, and the ceiling of the room, were covered with a torrent of blood. The common carotid was at once compressed effectually. The blood being spunged off, I sought for the divided artery; but soon found it had retreated below and within the digastric and stylo-hyoid muscles. These muscles were dissected, the artery brought into view and tied, the operation continued and concluded."—pp. 289, 290.

The author gives two cases in which he removed a tumour of the

submaxillary gland. In one of these an incision was made parallel with the lower jaw, two inches in length; the gland was exposed, the facial artery brought into view below the gland, and secured before dividing it. The operation was almost bloodless, and the patient recovered rapidly. He mentions another instance in which he saw this operation performed some years ago, by a bold surgeon, but bad anatomist. The facial and sublingual arteries were cut, but the dissection was continued in the midst of a torrent of blood, without stopping to tie the vessels; sponges were now thrown on in abundance; attempts were made to secure the vessels; but before this could be accomplished the patient lost so much blood that he expired within twenty-four hours—a glaring instance of the sacrifice of human life at the hands of ignorance and unpardonable temerity.

On page 298 we find an interesting case detailed, in which the tumour involved the parotid, submaxillary, and the lower part of the sublingual glands.

"The diseased parts were surrounded in an elliptical incision, extending from the lobe of the ear to the upper part of the neck, and including the submaxillary, the sublingual, and the parotid glands—all of them in a morbid and disorganized state, and they were *all entirely removed*."—p. 300.

It should be remarked, that on first attempting to extirpate this tumour, it was proposed to tie the common carotid previously to proceeding with the dissection. In cutting down upon this vessel a small vein was divided, and air rushed in, producing such alarming symptoms as to make it necessary to suspend the operation, which was performed a week afterwards, without tying the carotid. As, however, this case has already been published in the *American Cyclopædia of Practical Medicine and Surgery*, (vol. i. p. 263,) we shall refrain from giving the details.

When it becomes necessary to remove a scirrhus thyroid gland, the author thinks that the carotid on one side should be tied; and if both lobes be diseased, as it would not be safe to tie both carotids, this might be done by two operations, in a case where injury justified a measure so hazardous. He gives a case in which the left lobe was removed; the carotid being tied on account of the difficulty of reaching the superior thyroid artery, owing to its great depth. The inferior thyroid did not bleed.

As a measure of prudence, the advice here given may be followed, but we do not consider it necessary. The writer of this, about two years ago, assisted Professor Smith, of Baltimore, in the removal of a very large tumour of the thyroid, implicating both its lobes. The carotids were not tied, yet the loss of blood was inconsiderable, except from the transverse jugular vein, which was divided. It is a little remarkable that in this case also the thyroid arteries, except the upper one on the right side, did not bleed. They seemed to have become completely obliterated.

We shall pass over several subjects treated of by the author, viz: tumours of the testicles and of the mucous glands; cancer of the lip and tongue; tumours of the palate and pharynx; tumours of the tonsils, of the stomach and intestines, of the rectum, vagina, uterus, bladder, &c., to the part of the work which treats of erectile tumours.

Under this head the author includes tumours of the arteries and tumours of the veins. Tumours of the arteries, he says, may be divided into congenital and accidental. The accidental include aneurism, and aneurism by anastomosis. Of the former he does not treat.

The following case is not without interest.

A very fat comely girl, aged eighteen, was admitted into the M. G. Hospital, affected with an erectile tumour as large as a hazel-nut, which occupied the internal angle of the right eye, just above the lachrymal sac. It had an active pulsation, which extended into the surrounding arteries. The pulsation of the facial was very strong; and by compressing it, the vibrations of the tumour were much lessened. Compression of the temporal artery produced no change. The skin over the tumour was slightly reddened; there was a sensible increase of heat; the pulsation of the carotid was increased, and pressure on this vessel suspended the pulsation of the tumour. The stethoscope, applied to the carotid and facial arteries, gave the saw-mill sound.

"A small incision was made between the tumour and the cavity of the orbit. The pulsation of the anastomosing branch of the ophthalmia was discovered, and a ligature passed round this branch. Next, an incision was made across the facial artery, below the tumour, and after allowing it to bleed about eighteen ounces, a compress was applied to include the artery and sac. On the division of the facial the pulsation ceased, and the patient was relieved from her bad feelings."—p. 401.

On removing the dressings, however, slight pulsation was perceived in the tumour. Still it was hoped that a cure might follow, as the wound healed kindly; and the patient feeling comfortable, she was discharged at her own request. These hopes were disappointed. In a short time she returned to the Hospital; a slight pulsation being still discernible in the tumour, and the internal angle of the other eye had a pulsation somewhat stronger than that in the right. The carotids on both sides, especially on the right, throbbled violently, so that she sometimes felt as if "the top of her head was flying off." The upper part of the face and forehead were red and swollen; and, on the whole, there was a great aggravation of the disease. Under these circumstances, the author observes: "There seemed but one course remaining: that of tying both carotids, or, rather, of tying one; and if this did not answer, the other."

"On the 2nd of January, 1830, I tied the right carotid. The pulsations on the right side were immediately relieved. Those of the left continued for some time, then slowly subsided; and on the 3d of March she was discharged, perfectly cured."—p. 403.

The sympathy of the arterial system of one side of the head, with that of the other, forms an interesting feature in this case.

"The vibratory action of the vessels of the right side, produced corresponding vibrations in those of the left. Hence arose some embarrassment in the treatment of the case; since it seemed probable that the cure of the original affection would leave behind it a disease equal in amount to itself; and it never could be determined whether this would be the fact, but by actual experiment. In the period of disease which succeeded the operations on the facial, ophthalmic, and temporal arteries, the phenomena were in truth more conspicuous on the left than on the side originally deranged. So very striking were they, that I was entirely at a loss whether the ligature of the right or left carotid would be most likely to be useful. The perfect success, from tying the right carotid, showed that the affection of the left side was altogether sympathetic; yet certainly it is remarkable that

two great arteries like the carotids, should seem to be so much under the influence of the nerves, as to take on this sympathetic action; unless we deny the doctrine that the pulsations of the great arteries are dependent principally on the action of the heart, and allow that they act from their own power."—pp. 403-4.

Under the head of congenital tumours of the veins, the following case deserves to be noted.

"This was a boy ten years old, who came to the M. G. Hospital in December, 1833. He had a tumour on the back part of the head, covering most of the os occipitis, especially on the right side. It was an irregular, knotted, flaccid tumour, composed of very hard cords; so hard that it seemed impossible they could be veins; yet there shot out from this tumour, purple-coloured vessels to the right side of the head, as far as the forehead, and also over the summit of the head. In the centre of the swelling was quite a solid knot, like a filbert.—The father's story was, that he first saw a small tumour on the back of the head, when the boy was two years old, and that it had gradually increased since. The father was a German emigrant, and had been absent from the child most of the time since he had been in this country, which was about nine years. The boy was subject to the head-ache, and had been frequently ill, and had a sickly complexion.—A question being made as to the expediency of the removal of the tumour, or rather of that part of the tumour on the os occipitis, I had some doubts as to the effect of the operation, from its being impracticable to remove the ramifying veins from the upper part of the scalp. If, however, these veins were supplied from those in the tumour, or if, on the other hand, they returned their blood through the tumour, the interruption caused by the removal of the latter, might result in a successful termination.—An operation being therefore decided on, I made a crucial incision on the surface of the tumour, dissected up the scalp, and exposed this large knot of vessels buried in a mass of connecting substance. Then, seeking for the base of the tumour, I could find no place distinctly marked as such, because the venous net-work extended itself gradually and insensibly into the surrounding substance. I therefore carried the knife round the body of the tumour, cut through numerous large, hard veins, which poured out a torrent of blood, and removed the mass down to the pericranium. The bleeding veins had no disposition to contract, and were tied. In tracing some of them, as far as they could be distinguished, they seemed to penetrate the cavity of the cranium—an appearance which gave me some uneasiness lest I should not be able to secure them, and lest the contents of the cranium might be disturbed by the inflammatory process consequent on the operation. By ligature and compression the bleeding was stopped. The wound was brought together and the skin united. Part of the wound did not heal at once. Two weeks after, the boy had a slight attack of erysipelatous inflammation. He recovered wholly, and was discharged in about six weeks from the operation. The veins on the scalp gradually diminished, and when he went off, seemed in a fair way to shrink up. The boy's health was perfectly good."—pp. 430-2.

In the treatment of varicose saphena veins, Professor Warren does not think the operation usually practised, of excising a portion of the vein, necessary. When it becomes necessary to resort to an operation, it is sufficient to divide the vessel, and the hardened cellular texture about it, so as to allow it to retract. "In this case, a small compress, being well placed and bandaged on the part, the whole leg and thigh being also bandaged, there is no danger of reunion of the vein. Nor," continues the author, "have I ever saw any bad consequences, in the many cases in which I have operated by the division of the vein." When the operation is not successful, he thinks it may be owing to want of proper confinement afterwards, or to the enlargement of both saphena veins below the knee. In the latter case, he divides both vessels, or the common trunk formed by their union above the knee, an operation which he says he has sometimes practised.

In speaking of varicose saphena, Professor Warren does not allude

to the needle and twisted suture, proposed by Davat, in these affections;* and we are a little surprised that he should have made the same omission in treating of varicose tumours of the spermatic cord—the more especially as this procedure has excited considerable discussion in the French metropolis, within the last two years. It consists in passing a fine needle through the skin, so as to transfix the vein from before backwards—afterwards turning the point upwards, and bringing it out by transfixing the vessel and skin higher up, and from behind forwards. A common ligature is then wound round the needle, as in the twisted suture, in order to keep the opposite surfaces of the vein in contact with each other.

The methods mentioned by the author for the treatment of the disease are, compression, ligature of the spermatic artery, ligature of the spermatic veins, and excision of these veins.

Compression, as proposed by Breschet, is effected by screwing a small forceps, with flattened padded blades, upon the vein, where the instrument is suffered to remain until inflammation and obliteration are established.† Professor Warren has not been able to get his patients to submit to this procedure. Ligature of the spermatic artery sometimes fails. One patient, who had been operated on in this way, came to the author afterwards, having experienced no benefit. The veins were excised, and he recovered perfectly in two days, and has remained well ever since. In one case, he applied a ligature to the spermatic veins with success: but thinks the operation by excision of these veins the best. He informs us that he has practised it for many years, and that in no instance has it been necessary to repeat it. The following is the method of performing the operation.

“The patient is placed on a table, the external parts being previously shaved. An assistant holds the *vas deferens* firmly and carefully between his thumb and forefinger. An incision is made over the swelled veins, two inches long. They burst through the aperture of the skin, are seized by the operator, and divided, first at the upper angle of the wound, then at the lower. In the first division, it is necessary to avoid pulling down the veins, because the bleeding orifices, being drawn upwards into the sheath of the cord, are more difficult to discover. If they continue to bleed after a few minutes, ligatures are applied to as many orifices as require them. After waiting until the bleeding has wholly ceased, a stitch is to be made in the middle of the wound, and the rest closed with adhesive plaister. The wound often heals by the first intention.”—p. 411-2.

This operation, Professor Warner informs us, he has never seen attended with any unpleasant consequences, except in a single instance. In this case the whole scrotum became extensively infiltrated with blood, in consequence of neglected hemorrhage, and, with the testicle, sloughed away.

“This occurrence,” observes the author, “was a warning to me, and I wish it may be to others, to have the case carefully watched after the operation is done. You have perhaps heard of the fate of Professor Delpech, of Montpellier, who was assassinated by a man who had lost the testicle from excision of the spermatic veins. Such an occurrence would almost prevent our doing an operation in which there is danger of consequences insupportable to the pride of the patient. The proper course would be, to let the patient know that the testicle is probably useless before the operation, and that after it the organ may wither and even

* See the preceding No. of this Journal, p. 100.

† See this Journal, Vol. XVII., p. 231.

shrink away. I mean to say that it may wither up; not that it will necessarily do so."—p. 445.

There are several other topics in the work which we should be pleased to notice, did our limits admit. But as we have already occupied considerable space by the extent of our extracts, we cannot do more than enumerate some of the leading titles of those articles which we shall have to leave unnoticed. They are, tumours of the nerves; hemorrhoidal tumours; polypous tumours; tumours of the antrum; fungoid tumours of the uterus; hydrocele; tumours of the synovial membranes; tumours of the fibrous membranes; tumours of the eye; encysted tumours; and tumours of the abdomen.

Under many of these heads the author has given cases of considerable interest; but for the details of them, and of many other matters which we have been obliged to pass over, we must refer to the work itself, which we doubt not will be widely circulated.

We alluded at the outset of our remarks to the expectations raised in our own mind, and probably in that of others, by the appearance of the work which forms the subject of this article; and as we have endeavoured to give a fair and candid exposition of its contents,—purposely refraining from remark or comment as much as possible, allowing the author in most cases to speak for himself,—the reader will, we hope, be able to form his own opinion as to how far the work is calculated to satisfy those expectations. For ourselves, we must confess that, having long known the author as one of the most distinguished and successful of American surgeons, we had indulged the hope that,—with such a guarantee for the successful accomplishment of any thing he might attempt,—we should have found in the present work a rich and lucid exposition of pathological views, calculated to shed new light upon the nature and treatment of tumours. The author, it is true, has given a detail of an immense number of important cases and operations; but in omitting to analyze them, he has merely put us in possession of an additional supply of raw material, already abundant, to be employed by future generations. In making this remark, we would not be understood to say that he has not rendered an important service. Our remark applies to the manner more than the matter. We would have been better pleased had the author given us more of analysis and philosophical generalization, and less of merely operative detail; more effort to instruct us in relation to the origin, developement, and tendency of tumours, than display of the incisions and manipulations by which they are to be removed; more of the lights of pathology and of general treatment, and less about the knife.

The fault to which we allude, we consider the besetting sin of medical inquiry at the present time. In their zeal for observation, the votaries of medical science seem to have lost sight of induction—so indispensable to give utility to their labours. Indeed, in this respect, their conduct is, perhaps, as reprehensible as that of their predecessors, who were purely speculatists; for, to use the language of a recent writer, "while the followers of one party, confine themselves to the collection of facts, which they know not how to co-ordinate by philosophical conceptions, those of the other, too frequently lose them-

selves in vain hypotheses, and seldom produce more than mere empty dreams."* We would not, from these remarks, be understood to depreciate the value of isolated observations. We are too well satisfied of the benefits they are capable of conferring on medical science. We only object to the present rage, we think too prevalent, of publishing bare details of cases, without any disposition to generalize from them, and with a total omission of any attempt to submit them to a process of induction, and thus to draw from them the valuable principles they might serve to establish.

But to return from this digression, we feel it incumbent on us to say, that the remarks in which we have indulged, are not designed to apply to Professor Warren, more than to most of his cotemporaries. He has only followed the example of many who have gone before him; and in doing so, has produced a work, abounding with useful facts, which, notwithstanding the defects to which we have alluded, and faults of style, resulting from the retention of the lecture-room phraseology, we cheerfully recommend to the members of the profession, as containing a rich record of personal observation and experience. The lithographic illustrations add to the value of the work, and in point of typography and paper, it is superior to any specimen we have seen emanating from the American medical press.

E. G.

ART. X. *Recherches Pratiques sur la Thérapeutique de la Syphilis, ouvrage fondé sur des observations recueillies dans le service et sous les yeux de M. CULLERIER, Chirurgien en chef de l'Hôpital des Vénériens.* Par LUCAS-CHAMPIONNIERE, Docteur en Médecine. Paris, 1836. pp. 415, 8vo.

Practical Researches relative to the treatment of Syphilis; a work founded upon observations collected in the service and under the eye of M. CULLERIER, Chief Surgeon of the Hôpital des Vénériens. By LUCAS-CHAMPIONNIERE, M. D.

From the great reputation enjoyed by M. Cullerier, a book under the authority of his name is calculated to attract much attention. Dr. Lucas-Championnière subjoins, by way of introduction, a letter from this celebrated surgeon, in which he not only acknowledges the work as a faithful expression of his opinions, but adds many very interesting observations connected with the topics upon which it treats. Though not formally attached to the physiological school of medicine, M. Cullerier has the liberality to admit that the happy modifications which the treatment of syphilitic diseases have experienced within the last fifteen years, are entirely owing to the efforts of its disciples.

* W. J. A. Werber. *Entwicklungs geschichte der Physiologie und Medizin.* Leipzig, 1835.

These, however, he charges with carrying their positions too far; adding, by way of apology, that, like their master, they wished to strike hard, so as to make themselves the better felt. He alludes particularly to their denial of the existence of a specific venereal virus, and their refusal to allow any useful effects to mercury in the treatment of syphilitic affections.

But notwithstanding his belief in the identity of a venereal virus, M. Cullerier is far from yielding that implicit faith to the specific powers of mercury over it, which such a belief usually begets. There is, he thinks, no more reason to admit the existence of a specific for syphilis, than for small-pox or scarlatina.

"Mercury," he remarks, "to which, for so long a period, the virtues of a specific have been ascribed, is far from possessing any such marvellous property; a fact demonstrated by daily experience. No, assuredly, we cannot cure all syphilitic affections by means of mercury. A specific would be very desirable at all times; for physicians who are so situated as to be obliged to prescribe for a great number of syphilitic patients, know very well the difficulties connected with its treatment. But if mercury is deprived of its title of specific, we must still recognise it as endowed with great power." * * * "The treatment of syphilis will never be rational; it will never be sure and satisfactory; until we have abandoned the idea of acting upon the cause of the disease. The pretensions of those who think that mercury attacks the principle of the malady are entirely unfounded, since no one has ever seen such principle. The consideration of symptoms furnishes the true basis of the treatment of syphilis. It forms the basis of my own practice; and it is that which you have so perfectly conceived and set forth."

Such is the profession of faith of M. Cullerier, whose field for observation in hospital and private practice has afforded him more extensive opportunities of making himself acquainted with diseases of this class, as manifested among all sexes and conditions in life, than was perhaps ever before presented to any individual. He gives us strong reason to believe that he has pursued his inquiries into the nature and treatment of syphilitic affections, not only with zeal, but with a desire for truth and a freedom from prejudice. When it is recollected that for twenty years M. Cullerier unremittingly persevered in the practice of exhibiting mercurials indiscriminately, according to the doctrines of the old school, we must certainly give him great credit for having thus far disengaged himself from prejudices which had been so long cherished.

One of the most interesting points connected with the investigation of primary syphilitic affections, is involved in the question, whether a symptom originating from contact with an unhealthy person is precisely of the same nature as that from which it was derived? M. Lucas-Championnière thinks that a gonorrhœa derived from sexual intercourse, always proceeds from contact with gonorrhœal matter; whilst a syphilitic ulcer originates only from a sore of the same character. It is well known among practitioners that ulcerations are often contracted by intercourse with females, where no such lesions could be found upon the labiæ. In such cases our author thinks that the ulcers which gave rise to the infection may always be formed at the neck of the uterus, as has been verified in numerous instances by examinations with the speculum.

"It is," says he, "externally, or at the entrance of the vulva, that ulcers are

generally developed in the female, whilst they are rarely met with in the course of the vagina. But since the speculum has been applied to the investigation of venereal affections, it has been ascertained that in many women the neck of the uterus presents ulcerations and inflamed spots, very similar to those characterizing the venereal chancre."

The pathological discoveries here set forth, may be all very true, and are certainly interesting; but still we are inclined to think that the form in which a venereal affection manifests itself is less controlled by the nature of the acrimonious matter from which it originates, than by circumstances connected with the organization or constitution of the patient. Sensible of the mischievous practical results which must almost necessarily attend a belief in the specific nature of the forms of syphilis, our author endeavours to counteract them by the following observations.

"Syphilis is generally considered as a peculiar affection, only to be advantageously combatted by recourse to some substances endowed with specific virtues; which, abandoned to itself, must always increase, unless the progress of the virus be stayed by some destructive agent; an affection differing in every respect from all other diseases, most of which, as is well known, may disappear from the efforts of nature alone. This is the prevailing opinion; and, governed by this principle, most physicians still hasten to cover ulcers during their most acute stages with mercurial ointment, make frictions of the same upon tumours in the highest state of inflammation, and, in fine, treat the symptoms of syphilis in a manner totally different from those of all other known maladies."

We are pleased to find our author modestly acknowledging the obscurity which still invests the subject of the diagnostics of genuine syphilitic chancre, and admitting that a sore of circular form, excavated appearance, thickened edge and base, and bottom covered with adhesive matter, as described by Hunter, or any other specific signs given by authors as evidences of true venereal chancre, are far from being pathognomonic characteristics, inasmuch as the most slight and superficial primitive ulcerations, may terminate in very serious and inveterate consecutive affections. The same difficulty he conceives exists in regard to the true nature of a variety of other primary affections, such as vegetations, ulcerations, tubercles, and pustules seated about the anus, and neighbouring parts. As to those symptoms denominated consecutive, they are often still more difficult to recognise. Ulcerations in the mouth, for example, proceeding from syphilis, mercury, or other causes, may be readily confounded. Cutaneous eruptions have no better distinctive characters, the coppery tinge by which they are surrounded, and which authors have set down as their diagnostic, being any thing else than constant. Affections of the bones may also lead to error, since they are absolutely similar to those produced by other causes.

The decision made by Astruc, and still maintained by many physicians, that the symptoms which are promptly cured are not to be considered of a syphilitic character, he thinks completely refuted by the facts, that in general they are rendered more or less inveterate and formidable by the circumstances and habits of the patients, and also that consecutive symptoms are frequently met with in persons who at first experienced but the slightest affections, which were quickly

healed. Those physicians who at the present day think that all the symptoms which yield to the internal and external administration of mercurials, are of a truly syphilitic character, and therefore look upon mercury as the touch-stone by which syphilitic affections are to be recognised, appear to forget that by such a rule, all other affections which get well by the use of mercury, may be set down as of genuine syphilitic origin.

"It is certain," observes our author, "that mercury, properly administered, is a powerful remedy against the symptoms of syphilis. But like all other remedies, it should be used with discretion: and in order to derive its good effects, we ought to discriminate those cases to which its administration is best adapted. Experience teaches us in the most positive manner, that mercurials, far from hastening the cicatrization of certain syphilitic ulcers, on the contrary retard them, whilst other remedies more appropriate to the condition of the sore, or to the constitution of the patient, show themselves prompt and efficacious. The experience of M. Cullerier leaves not a doubt on this point. How then can we pretend to distinguish by the employment of mercury alone, those lesions which belong to a syphilitic infection, from such as originate from some other cause?"

Now when all the diagnostics of syphilis that have been enumerated, fail, in what manner is the genuine disease to be identified?

"Strictly speaking," says our author, "there is but one circumstance upon which we may rest our conviction; which is, the supervention after a longer or shorter time of a general infection. Syphilis is, in fact, only truly characterized when it has passed through certain stages, and become constitutional, attacking successively tissues of various natures, such as the skin, the mucous membranes, and the fibrous and bony structures. This re-appearance, after a longer or shorter time, of a disease, the symptoms of which had been completely effaced, is assuredly the phenomenon which ought to attract most attention from practitioners. At the present day, when the ameliorations adopted in the treatment, render the primary symptoms in general so much less severe, it is to their recurrence that all their inquiries should be directed."

With our author we consider all the marks which have, from time to time, been pronounced infallible indications of genuine syphilis, as extremely fallacious. The test which he applies is particularly unfortunate, as it places both the physician and patient in the awkward predicament of not knowing the nature of a primary affection, which the one is suffering and the other treating, until the lapse of weeks, months, and years have shown whether or not constitutional symptoms will ensue. We think it best under such circumstances to cut the knot which so many have vainly endeavoured to untie, and, throwing aside all nice distinctions, to regard every sore upon the genitals ensuing to sexual intercourse, as capable of degenerating into the most inveterate ulcers, followed by the ordinary train of consecutive affections. A similar conclusion has, we are aware, led the mercurialists to accomplish very great mischief by the indiscriminate employment of their supposed specific. But now that a better light is thrown upon the subject, we regard it as affording, when unperturbed, the surest basis for medical practice. In what this practice should consist will be subsequently shown.

The second chapter is devoted to a consideration of the general treatment of syphilis.

It is only within the last ten years that the practitioners in the large

venereal hospital of Paris, have yielded sufficient credence to the evidence of those who believed and proved that syphilitic affections might be cured without mercury. M. Cullerier's practice in the Hôpital des Vénériens, where five or six thousand were annually admitted, formerly consisted in exhibiting mercurials to all indiscriminately. Millions of pills were kept prepared, each containing an eighth of a grain of oxymuriate of mercury, two or three grains of flour, and sometimes an eighth of a grain of opium; a box containing twenty-eight of these was given to each patient weekly. The pills after having been kept on hand for a few weeks, acquired the hardness of stone, so that they generally traversed the whole tract of the alimentary canal, without suffering the least decomposition, the patients often declaring that they recognised the entire pills in their stools. This was conspicuously shown in cases where the ignorant patients, under the idea of hastening their cure, sometimes swallowed, with impunity, the contents of a box at one dose, whilst at others they went into the opposite extreme of incredulity, and estimated the curative effects of the pills so lightly, as to give or sell them to their comrades. When these and other facts became generally known and properly considered, they led to the inference that the mercurial routine was little if any better than a treatment without mercury. Nevertheless, the enormous number of patients which underwent the irregular treatment described, all, sooner or later, recovered; and, subsequently, exhibited secondary symptoms no more frequently than those who had been subjected to a more regular mercurial treatment.

These observations led M. Cullerier to make further inquiries, both in hospital and private practice, the result of which was, that of an immense number of patients who had taken no mercury, or who had used it in the very unsatisfactory manner described, the instances of relapse were found to be infinitely small, when compared to those occurring after the employment of active mercurials. No wonder then that he should have been led by such results of his own observations, and the concurrent testimony of others, to decline the administration of mercury any longer as indispensable to the treatment of syphilis. For the last ten years, our author informs us, mercury has been used in the practice, from whence the facts just stated were derived, only as an auxiliary in the treatment of local symptoms. It is well known that in many hospitals in France, the same practice is adopted. Now, to that mass of individuals who neglect their primary symptoms, it is necessary to add a considerable number of subjects who ought to be exposed to relapses, from having undergone a non-mercurial treatment. If the opinions, which prevailed so long, were not erroneous, the hospitals should exhibit multitudes of those who suffered the penalties due to an infraction of the precepts laid down by authors. We are, however, informed that in the wards of the *Hôpital des Vénériens*, as well as every other place where the same practice has been adopted, consecutive symptoms of a grave character, are infinitely more rare than formerly. Twenty years ago, for instance, returns of the

disease were very common, and nothing was seen but exostosis, necrosis, destruction of the soft palate, tubercles on the skin, &c.; one ward was reserved for such unfortunate subjects, who, horribly disfigured, or mutilated, presented a combined spectacle which, happily, is seen no more.

"At present," observes our author, "when one of these formidable cases occurs, those who wish to observe it must make haste, since they only show themselves at long intervals, and it is almost without example that a patient, who submits willingly to the means prescribed, leaves the hospital without being entirely cured of his secondary symptoms. It is proper to add, that the consecutive symptoms met with are infinitely less formidable than formerly encountered, which were very often beyond the resources of art."

The truth of all these observations, our author confirms by reference to the authentic statistics of the hospitals, which show the results of the mercurial and non-mercurial methods of treatment to be as represented.

The frequency and gravity of the symptoms following the mercurial treatment, naturally gives rise to the question, whether these are to be regarded as syphilitic, or purely mercurial? In discussing this point our author observes,

"That some affections, such as pains in the bones, exostosis, and certain neuralgias, are seldom to be met with, except among those who have used mercury. M. Cullerier has records of only two or three cases forming exceptions to this rule, and these are regarded as somewhat deficient in authenticity. But if, on the one hand, such cases develop themselves in persons who have taken mercury, it must be observed that these same persons resorted to the use of this metal for the purpose of getting rid of syphilitic symptoms. It is well known that mercury is administered freely in a multitude of diseases besides syphilis, and also that certain persons are exposed to the noxious effects of mercurial fumes, both of which causes produce a class of disorders differing altogether from those properly designated consecutive syphilitic symptoms."

We agree with our author that these last are not wholly due to the mercury, the improper administration of which tends to subvert the efforts of the system to resume its healthy actions, and to awaken a train of morbid symptoms in the tissues which would otherwise have remained sound.

The two following propositions, furnish the results of our author's observations, sanctioned, of course, by those of M. Cullerier.

"1. The symptoms of syphilis commonly yield readily to the employment of other means than the mercurial preparations."

"2. Diseases thus treated are not more subject to return than those in which mercury has been exhibited; a mercurial course, even when best conducted, not preventing relapses of the most serious character. In admitting the efficacy of mercury for the removal of certain symptoms, and regarding it as a precious medicine, we should, however, reject all which has been said up to the present day in relation to its specific qualities, and its reputed action in annihilating the syphilitic virus."

One of the most serious disadvantages resulting from a blind faith in mercury as endowed with special powers over syphilitic affections, arises from the inordinate use often made of it by persons goaded on by extreme anxiety to rid themselves of a disease the effects of which, either fancied or real, inspire them with such terror. Were mercury a much milder agent than it is, the strong inducements thus presented

to use it inordinately, would be fraught with danger to the economy. The confidence so commonly attached to mercury as an antidote to syphilis, often renders it extremely difficult to persuade patients to dispense with it in cases where its employment would be useless or positively detrimental. It is evident that this evil must attend upon the use of any other active agent which may be endowed by professional or popular credulity with specific powers to control the disease.

We fully concur with our author in believing that mercury administered for the cure of the primary symptoms of syphilis, tends to protract their removal.

"A multitude of symptoms," he observes, "yield to proper treatment in one or two weeks; whereas, if the patients were submitted from the first to the effects of the supposed preservative, though affected with the slightest symptoms, they would remain under treatment at least forty days."

It is hardly necessary for us to repeat what we have said in regard to the effects of salivation, the consequences of which we consider far more pernicious than the worst forms of syphilis. Even the moderate doses generally administered, we believe with our author to be often injurious.

"Mercury, given in very small doses as a specific to the syphilitic virus, and with the view of annihilating it by a chemical or some other operation, is," he remarks, "an absurd practice, which can only be adopted by those whose opinion of syphilis is founded upon the vague, confused and ancient notion of the specific qualities of this metal, and of the dangerous consequences that have been lately shown to attend its administration."

In justice to our author, we think it proper here to state, that whilst he thus severely deprecates the ancient practice in syphilis, he is by no means a subscriber to the doctrine of total abstinence from mercury, to which agent he objects only when administered for all syphilitic symptoms, according to the routine method.

"The preparations of mercury," says he, "are substances too precious in the treatment of this disease, and have had their efficacy tested by too many facts, to allow us to deprive ourselves of agents so truly useful. But after having studied the application of mercury without prejudice, and compared the results, we remain convinced that it is only adapted to the treatment of certain cases."

We now proceed to notice the particular measures recommended for the treatment of syphilitic affections by Dr. Lucas-Championnière, who professes to found his practice only on the basis of observation and experience, and upon the supposition that the nature of the syphilitic virus is unknown, whilst the precise channel by which it gains admittance, together with the operation by which it is subsequently eliminated from the system, are matters equally obscure.

The therapeutic agents by which the symptoms are removed are very numerous, and multiply daily as the materia medica becomes more perfect. As in other diseases, they are divided into general and local.

"We may," says our author, "give a theoretical exposition of the general measures by which we make a favourable impression upon the system; but the local applications are so numerous, that their enumeration would be tedious, if not impossible, since they vary according to the condition and progress of the symptoms, as these are regulated by times, places, and subjects; in fact by a multiplicity of circumstances which can only be pointed out by reference to particular cases."

Commencing with the general modifiers of the antiphlogistic class, the first mentioned by our author, is rest in bed or in a horizontal position, which, as a means of avoiding the principal causes of stimulation, is useful in the treatment of all syphilitic symptoms, and indispensable in most of them. The absence of all motion is, our author thinks, imperiously demanded whenever there exists affections of the mucous membranes, bones, and in general any severe symptoms. The rest thus imposed, is not only advantageous by preventing all excitement in the parts affected, and in opposing the stasis of blood towards the pelvis, but tends to place the patients in that state of debility which favours the resolution of every kind of inflammatory engorgement. It unfortunately happens, that the necessity of secrecy and various other circumstances, oppose so many obstacles to this measure, as to render its adoption seldom possible in private practice, in which scarcely one patient in twenty can be persuaded to submit to confinement until the symptoms become so formidable as to render locomotion impossible. It is, therefore, only in hospitals, or *maisons de santé*, that strict repose can be secured.

The second therapeutic agent laid down by our author, relates to regimen, or the adoption of means to diminish the process of nutrition, obliging the patients to live, as it were, upon themselves, by only allowing them the lightest nourishment. A diet more or less strict, is, he observes, exacted in general practice, in the treatment of the slightest affections, and it is difficult to explain the reason why practitioners have ever come to believe that they could dispense with such a precaution in the treatment of syphilis, and allow patients, who may be carrying large inflammatory tumours tending to suppuration, and the invasion of the neighbouring tissues, the same nourishment they are accustomed to take in ordinary health. The amount of food should be reduced for some days according to the degree of intensity manifested by the symptoms, and the duration of the infection.

"Great importance," says our author, "should be attached to regimen as a therapeutic agent for the cure of syphilis. It is from this means alone that M. Cullerier has often obtained cures, when all others have failed. But in all cases, the efforts of the practitioner should be directed to place the patients in the most favourable conditions for the administration of remedies, and regimen assists marvellously towards the attainment of this result. It is evident that the severity of the regimen ought to vary according to the peculiar habits or constitutions of individuals. One patient will be promptly reduced by abstinence, so as in a few days to be placed in the most favourable circumstances, when others will require the addition to regimen of repeated blood-lettings, baths, &c."

Whilst however he thus insists upon the importance of a proper course of regimen, he admits that a too rigid and long abstinence is fraught with serious disadvantage to the system.

The third general antiphlogistic agent, namely, blood-letting, is not, our author thinks, like the two first, indispensable to all cases, but only necessary as an auxiliary where the inflammation runs high, or the general condition of the patient is plethoric, etc. Among other general means of depletion, purgatives are mentioned with but faint praise; M. Cullerier making little use of them in his practice, except

in some cases occurring in subjects of a lymphatic temperament, and relaxed habit of body. Baths are recommended as powerful anti-phlogistics, necessary at the first onset of syphilitic symptoms. The operation of these general agents of reduction, is favoured by the use of mucilaginous drinks sweetened, whey, chicken water, barley water, &c. Mild demulcents are in fact the only drinks which ought to be prescribed during the period of irritation, and even throughout the whole duration of a recent infection.

Such are the means which form the basis of the antisymphilitic treatment as now conducted by M. Cullerier, and which are alike indispensable, whether the affections be primitive or consecutive. Our own experience enables us to testify with the utmost confidence to the assertion of Dr. Lucas-Championnière, that these general means alone are often sufficient to effect cures.

"We cannot," says he, "too much insist upon this point, which serves as the foundation of all rational treatment of syphilis. When we have removed the patients from every species of stimulation, and subjected them to repose in bed—strict regimen, sanguine emissions, baths, etc., that inflammatory disposition which we almost always observe at the commencement of the disease is sensibly moderated; many of the symptoms disappear of themselves in a very short time, many yield readily to the influence of a local treatment, and a small number only, require a particular medication."

We now come to notice another and very different kind of general modifier, appertaining to the class of medicines called stimulants, at the head of which we find the mercurial preparations. From what has been already said, it is plain, that our author is far from being a routineist as regards mercury, whilst he has not, like many, gone into the opposite extreme of entire abstinence, from its employment under peculiar circumstances. His particular views upon the subject may be gathered from the following passage.

"When we find it necessary to subject the general system to an active course of medication, for the purpose of producing a change favourable to the removal of the symptoms, we may select from among a very great number of substances, those best adapted either to the constitution of the patient, or the form under which the disease manifests itself. The examination of these different medicines will lead us at first to take a review of their various preparations, and finally to decide upon those which are to be preferred.

"Of all the medicines to be examined, none exert a more decided operation in effecting the removal of the syphilitic symptoms, than those which, under different forms, have mercury for their base. This is a truth which must be acknowledged; and if in this work we have so often opposed their administration, it is because a belief in their indispensable necessity in every syphilitic affection, subjects the patient to an active treatment, which we believe not always required, and often extremely injurious to health, whilst on the other hand it leads to neglect in the employment of those soothing and efficacious measures, which restore health without exposing the system to lesions more or less severe."

The mercurial preparations generally employed in the practice of the Hôpital des Vénériens, are the black oxyde, sulphuret, chloride, cyanuret, and ioduret. In primary affections, frictions of the mercurial ointment in portions of a quarter, half, or whole drachm, are made locally, especially in cases of bubo; also in cases of chancre on the penis, which resist the ordinary general depletory and

local treatment; in cases of obstinate chronic gonorrhœa, and in certain indurations of the prepuce and skin succeeding ulcers or tubercles of those parts. It is also prescribed in portions of a half or whole drachm, with a view to its general effects, in some intractable cases of primary syphilis, or where the internal use of other mercurial preparations seem to be demanded, whilst the patient is not in a situation favourable to the internal administration of mercury.

These frictions are made by the patients, at intervals varying from one to three days, according to circumstances, sometimes immediately on the parts affected, sometimes to the groins, the internal parts of the thighs or legs, below the knees, or to the soles of the feet. Frictions are rarely applied to the arms, for fear of producing salivation, and also, because M. Cullerier always prefers operating as nearly as possible to the seat of the symptoms. By making the frictions at distant intervals, and observing the proper hygienic precautions, our author thinks the accidental effects of mercury, especially salivation, which is the most frequent one, may be avoided. As opponents, however, of the inconvenient, filthy, and, as we think, unnecessary use of mercurial frictions, we invite particular attention to the following quotations from our author.

"Although hospital patients are on many accounts better situated than those in private practice, it nevertheless sometimes happens among the former, that mercury acts with great rapidity upon the gums and mucous membrane of the mouth. There are patients who cannot bear the slightest friction with the mercurial ointment, without immediate salivation. For this reason we ought to watch with the utmost care, the effects of mercurial frictions. At the commencement of the year 1835, we saw a young girl affected with two mucous pustules, and two ulcers on the labia, who, after the use of three frictions of a quarter of a drachm each, made at intervals of three days, experienced a salivation attended with great pain and severity, and which was arrested with great difficulty.

"At other times," continues he, "frictions excite upon the delicate skin, erysipelas and other eruptions, which not only invade all the parts upon which they are applied, but also other regions of the body. If mercurial frictions, even when made in the greatest moderation, did not occasionally affect the mucous tissue of the mouth, this method of treatment would assuredly be preferable to all others in cases requiring the employment of mercurials. But this circumstance ought to prevent them from being frequently used; for, notwithstanding some physicians pretend that such an effect is of little importance, we regard it as an unfortunate complication, and one which is very much dreaded by patients. Add to these objections, that patients treated at their own homes, from the necessity they are under of concealing their ailments, seldom find themselves so situated as to admit of its employment."

Mercurial ointment prepared by trituration, is likewise exhibited internally in the practice of the Hôpital des Vénériens, but our author informs us that the oxides are seldom resorted to. Externally the sulphurets, and especially cinnabar, are used with the most marked success, particularly in diseases of the skin.

In using the sulphurets, the patient is enclosed in a box up to his neck, and in this situation exposed to the fumes produced by throwing a drachm or two of one of the substances upon a heated plate placed at his feet.

"These fumigations," our author tells us, "are not only useful in diseases of

the skin, but in chronic ulcers wherever situated, exostosis and pains of the bones. By means of a small apparatus specially adapted to the purpose, the fumes from a few grains of cinnabar are also directed to the lower part of the throat, nasal cavities, &c. sometimes producing a prompt amelioration of affections in those situations. The mercurial fumigations are usually prescribed every day, or every other day, with intermediate baths of a simple or gelatinous kind. They however, often produce salivation, and the patients complain of them on account of the excessive heat by which they are necessarily accompanied. Occasionally they produce extreme irritation of the skin, however weak they may be made.

Notwithstanding all these, to us, weighty objections, especially their sialagogue tendency, our author attaches great value to their employment, as calculated to produce remarkable cures. It is rare, he informs us, that the exanthematous syphilitic affections, whether of a papular or pustular character, resist their operation, and he deems it a subject of regret, that the difficulty which attends their administration, and the necessity of having an apparatus specially adapted to the purpose, do not admit of their convenient employment in private practice.

The chlorides of mercury, so generally administered by practitioners, who put their faith in the internal use of this metal, are seldom resorted to in the practice of M. Cullerier. When he does prescribe either, he prefers the proto-chloride or calomel, which he gives in very minute doses, for fear of producing salivation, or an irritation of the alimentary canal, both of which are frequent occurrences. Two grains of calomel, united with a grain of opium or extract of cicuta, are administered, in divided doses, in the course of the day; a prescription which is particularly adapted to the treatment of chronic inflammation of the testicle.

The deuto-chloride of mercury or corrosive sublimate, is hardly ever resorted to by M. Cullerier, in consequence of its tendency, even in very feeble doses, to irritate the stomach and produce spasms and other inconvenient effects. When, however, it is administered, the quantity given is about one-eighth of a grain, united with a quarter of a grain of opium, repeated night and morning. M. Cullerier prefers the cyanuret of mercury to the corrosive sublimate, and administers it in similar doses. The preparations of mercury most employed by M. Cullerier, in the treatment of secondary symptoms, is the proto-ioduret, which he prescribes in pills, made according to the following formula:—Proto-ioduret of mercury, gr. xij.; extract of opium, gr. vj.; guaiacum, ℥j.; to be made into twenty-four pills, one of which is to be given morning and evening.

The proto-ioduret and cyanuret, are regarded as much less irritating to the stomach than the other mercurials. The first named preparation appears to be absorbed very readily, so as frequently to induce salivation, on which account its effects require to be closely watched.

It is chiefly in cases of chronic syphilis that the proto-ioduret is successfully administered in the practice of the Hôpital des Vénériens, and its effects are most obviously displayed when there exist consecutive ulcerations of the mucous membrane, cutaneous tubercles, exos-

tosis, articular engorgements, or other formidable affections in which the other mercurials have been prescribed in vain.

It thus appears that for the purpose of favouring the removal of certain obstinate primary symptoms, the physicians in charge of the hospital last named rely chiefly on the use of the mercurial ointment in frictions, and sometimes administered internally, together with the cyanuret of mercury; whilst fumigations with cinnabar, and the internal use of the proto-ioduret, are ordinarily reserved for the relief of the consecutive symptoms. M. Cullerier generally unites opium with every mercurial preparation which he administers internally, regarding it not only as an anti-irritant, but as a powerful adjuvant of mercury in effecting a removal of the symptoms.

Previous to entering upon the subject of the employment of mercurials in the treatment of syphilitic affections, it might have been proper to discuss the point, what are the circumstances which should lead to their use? In our author's opinion, recourse should never be had to them in primary affections, until the inefficacy of less exciting remedies has been ascertained.

"Since our object is not to decompose the syphilitic virus, but only to remove the consequences to which it may give rise, it is evident," says he, "that we should strive to attain this end by a mild course of treatment as often as possible, without exposing the patient to dangers which always attend the administration of an active agent."

In the hospital practice of M. Cullerier, it would appear that mercury is administered, with a view to its general effects, only in about one-tenth of the cases affected with the primary symptoms. Among his private patients, the proportion of those subjected to the use of mercury is greater, as these are seldom capable of submitting to the restrictions, and adopting the other measures which tend to heal the primary sores most speedily and prevent their degeneration.

Recourse to the administration of mercurials in the treatment of the consecutive symptoms, is recommended by our author much more frequently than in the primary affections. But he is nevertheless far from believing that a constitutional affection cannot be made to disappear, except under the influence of mercury or some other active medicinal agent. He tells us, on the contrary, that the most formidable symptoms yield with the greatest facility to the withdrawal of every cause of stimulation, and the use of apparently trivial local applications. Among other cases which he adduces in proof of this last assertion, is one which he had seen in the Bicetre, of a patient affected with tubercles, which had succeeded a very large ulcer in the back of the throat, where it had destroyed a portion of the posterior nares. These yielded and cicatrized in the course of about two months, without any other attention on the part of the patient than submission to rest and a moderate diet, the inhalation of emollient vapours, and applications of opium cerate. This case, he says, took place two years ago, since which time there has been no relapse.

Two other questions connected with this subject relate to the length of time mercurials, when required, are to be administered, and the

proportions to be used? In answer to the first, we quote from our author the following observation.

"The object to be attained in the treatment of syphilis, is the removal of the symptoms. When the parts diseased have regained their natural condition, all further protraction of the treatment would be, to say the least, useless. The employment of mercurials should therefore be suspended, whenever there are no longer traces of infection."

In reply to the second question, it may be remarked, that syphilitic symptoms disappear in different individuals at such indefinite periods, that it is difficult to fix by anticipation the amount of mercury that may be required. In recent cases it appears that M. Cullerier seldom employs more than ten or twelve grains of the sublimate or cyanuret, or half a drachm of mercurial ointment in divided doses, and externally a few mercurial frictions. When, after such recourse, the symptoms do not entirely disappear, or experience a greater or less amelioration, he thinks that the mercurial treatment should be suspended, the patients allowed some time to rest, and then subjected to the operation of some other medical agent. He recommends in all cases that the treatment should be suspended from time to time, and then resumed.

The following observations of our author convey a highly useful lesson to those who, possessed with the absurd notion of the specific operation of mercury upon the venereal virus, obstinately persist in its employment, to the detriment, if not destruction, of their patients.

"It is well known," says he, "with what facility the mucous membrane of the mouth inflames under the influence of the mercurial treatment, presenting at such times, in various points, and frequently at the bottom of the throat, ulcerations commonly superficial, and very difficult to distinguish from those produced by syphilis. Very many physicians persevere in vain in the administration of mercurials, in the hope of causing the cicatrization of these ulcers; but the effect is to injure the digestive organs, without at all benefitting the condition of the mouth. We could cite more than twenty examples of patients who, after having undergone several courses of treatment, entered the Hôpital des Vénériens, despairing of the condition of their throat as incurable, and who have left the establishment in a short time *perfectly cured, by the sole effect of laying aside all kinds of treatment.*"

To read the graphic descriptions, and attend to the nice criterions laid down by writers who have attempted to distinguish accurately between what are regarded as genuine syphilitic affections, and such as are ascribed solely to the effects of mercury, it might be thought one of the simplest things possible, to identify either by the slightest inspection. The case is, however, far otherwise in actual practice, when the experienced eye and most admirable tact are often baffled in attempting to discover whether the affection arises from the regular course of syphilis, or from the noxious agency of the medicine. We do not wish to be understood as advocating what is commonly termed, a mercurial disease, as we have never believed in the existence of any such malady. All that we would be understood as implying by the phrase mercurial affection, is that aggravation of the symptoms belonging to the train of syphilis which is often observed to follow the use of mercurials.

Since the discovery of iodine, it has been introduced very exten-

sively into the treatment of syphilitic affections. It was at first looked upon as endowed with specific powers over all kinds of tumours, and therefore especially applicable to the removal of buboes. But its reign as a specific has been short, and now it is employed locally and generally as an advantageous modifier, adapted not only to the discussion of buboes but to promote the removal of most other chronic syphilitic symptoms. M. Cullerier makes very frequent use of iodine in his practice, employing it externally as a topical dressing in the forms of ointment, solution and tincture. In combination with mercury, he exhibits it externally more frequently than other medicine. Alone, or united with potass, in the form of ioduret of potass, it is regarded by most of the French practitioners as possessed of decided anti-syphilitic properties.

It is a common practice with M. Cullerier, to combine one grain of iodine with two or three grains of hydriodate of potass, which portion is taken through the day in divided doses. He gradually increases the quantity taken daily, till it amounts to about two grains of iodine, and from six to ten grains of the hydriodate of potass. He also gives the tincture of iodine occasionally in doses varying from fifteen to forty or sixty drops, made into a potion taken in divided doses three or four times a day. The iodine given in these modes, generally agrees well enough with the stomach; but there are, nevertheless, many persons, as our author tells us, (and our own experience confirms his observation) whose digestive organs suffer such inconvenience from the use of iodine, and in whom it produces such pains in the head and other febrile symptoms, as to make it necessary to suspend its employment.

The iodine potion just referred to, is prescribed in cases of chronic engorgements of the testicles, and cervical and inguinal glands, in tubercles of the cellular tissue, cutaneous diseases, and affections of the bones.

"Iodine," says our author, "is a powerful anti-syphilitic, but it should never be administered in the treatment of the primary symptoms, unless in combination with mercury."

We object decidedly to this qualification, believing that it tends to convey erroneous impressions, with regard to the properties of both medicines, the general and local stimulating effects of which so far resemble each other, as to render them both improper in most cases of primary disease.

Iodine possesses one advantage over mercury, that of being in general less injurious to the digestive organs. On this account its administration may be continued much longer.

Brome, the medical effects of which are said to be very similar to those of iodine, is beginning to be used with much the same intentions. Its mode of administration is also similar.

Notwithstanding the high praises which have been bestowed by some of the profession, upon the preparations of gold and platina, M. Cullerier seldom employs them in his practice. Our author, however, thinks that they are sometimes capable of producing good effects in some inveterate cases where mercury and iodine have failed. The

chloride of gold, is a very active medicine, and its administration requires to be watched with the greatest attention, to prevent those injurious effects upon the digestive and circulatory organs, which it is capable of producing.

Among the general modifiers taken from the class of stimulants, our author introduces the several articles which are generally supposed to operate beneficially in syphilitic affections, through a special agency exercised upon the skin, on which account they are termed sudorifics. The articles of this kind in most common use are sarsaparilla, china root, guaiacum, sassafrass, antimony, and the carbonate of ammonia.

Sarsaparilla is generally prescribed in every case of constitutional syphilis, whilst the guaiacum is reserved more specially for affections of the bones and fibrous tissues. M. Cullerier frequently prescribes the carbonate of ammonia in those cases of pains in the joints, bones, and other parts of the system, which so frequently occur after the injudicious employments of mercurials. In certain eruptive diseases of the skin, he sometimes uses the mezereum, and dulcamara; but the article of this class which he employs most of all others, is antimony, as it exists in the tisan de Feltz. Whether the medicinal properties of this celebrated tisan, reside chiefly in the antimony which constitutes its supposed base, or in the small proportion of arsenic which cannot be entirely separated from the crude antimony, are points which our author does not attempt to determine: but he asserts, that the tisan always produces the most admirable effects upon patients who have been long under the influence of mercury: he refers particularly to its curative agency, after all other prescriptions have failed, in tuberculous affections of the face and nose, and ulcerations of the palatine arches accompanied with necrosis.

M. Cullerier, never resorts to this class of medicines in recent syphilitic affections, believing that the various articles it includes are all more or less stimulant in their operation, on which account they can never act advantageously, except in the chronic forms of syphilis. To us this is one of the most important distinctions which can be drawn in relation to the treatment of syphilitic affections, and applies equally well to mercury, iodine, and all other medicines usually called in requisition.

With respect to opiates, which we think exercise the most happy effects in almost every form of syphilis, we observe that M. Cullerier seldom prescribes them alone, but generally in combination with sudorifics, mercurials, and preparations of iodine.

A word or two may be usefully said in relation to the proper times for administering the various remedies just referred to. Most persons recommend the doses to be taken when the stomach is in its most empty state, which our author thinks may give rise to gastric inflammation, easily avoided by choosing another period. He tells us that M. Cullerier never administers his medicines until some time after a meal, when, deposited in the mass of food, the dose is moved about by the peculiar workings of the stomach and bowels, in such a way,

as to come in contact with every part of the mucous membrane, and be absorbed more readily than when confined to the small space which it must necessarily occupy if taken several hours after the completion of digestion.

In concluding our notice of the general modifiers most commonly employed in the practice of the principal venereal hospital in Paris, we cannot avoid making a few quotations from the text of our author, which we think contain highly valuable observations.

"Syphilis," says he, "presents in its march many caprices, if we may be allowed the expression, which depend, as we have already stated, not upon the disease itself, but upon the peculiarities of patients. Thus, sometimes it resists the use of mercurials, iodine, &c., and yields to sudorifics. At other times, mercurials seem to succeed very well at first, but soon all amelioration ceases, and the disease remains stationary, or gets worse; so that it is necessary to change the medicine and have recourse either to some other form of it, or choose one of a different base. Sometimes it becomes absolutely necessary to suspend every mode of treatment, and to abandon the patient to his own resources. Whatever medicine we may use, it is indispensable that it should be suspended from time to time, to allow the organs to rest. This is a precept laid down by authors; the utility of which the experience of every day tends to confirm.

"We have sought," continues he, "to particularize the cases in which one medicine ought to be preferred to another; but, independently of the well known action of each substance upon the different symptoms, there are other circumstances which ought to influence us in the choice of a remedy. Mercury, for example, being considered the most efficacious, is almost always prescribed with a preference which leads to its abuse in inveterate cases. Its forms and doses are varied, other substances are combined with it, until at length, the symptoms are so aggravated that they cannot be removed except with the greatest difficulty. Now, it is precisely under such circumstances, unfortunately of but too common occurrence, that a change in the treatment is generally followed by the most prompt alleviation. It is now that the employment of sudorifics, opiates, or the tisan de Feltz, produce such good effects. To persevere in prescribing a medicine, the use of which is not followed by sensible amelioration at the end of a certain time, is not the part of a sensible practitioner, or a good observer."

We will next proceed to notice the topical means which M. Cullerier thinks best adapted to promote the removal of the symptoms of syphilis. If the rational general treatment of syphilis requires as a fundamental consideration, that all idea of a specific venereal virus should be laid aside, it is no less indispensable that the topical measures should be applied without regard to the existence of any such foreign agent in the system. We entirely agree with our author, in his remark that the rational and methodical application of certain local modifiers which possess no specific qualities, is the surest plan, not only of rapidly dissipating the symptoms, but also of preventing the frightful complications which so often contribute to render the disease we treat of, so serious, notwithstanding all that is asserted to the contrary.

The primary symptoms of syphilis will, under favourable circumstances, frequently disappear very quickly under the observance of cleanliness, and a use of the most simple applications, whilst at other times they show themselves long rebellious to local means even when aided by the most highly approved general measures.

We regard ulceration as invariably the first sign by which primary syphilis manifests itself; for we do not believe in what some of the

French physicians call *bubon d'emblée*, or bubo developed without the existence of any previous sign of infection. In all cases where tumours in the groin result from impure sexual connexion, and where the patients think they have had no other venereal symptom, a strict examination of the penis will, we think, show either ulceration, the signs of its previous existence, or inflammation of the mucous membrane of the urethra. All who have had extensive opportunities of observing venereal affections in their primary stages, must know how frequently it occurs, that patients deny at first having any thing but the bubo which they exhibit, the sores which a nice inspection reveals, being entirely unknown to them.

Less rigid than Hunter, who believed in but one truly syphilitic chancre, and more strict than Carmichael, who contends for five primitive forms, M. Cullerier admits two varieties of the true venereal ulcer. One of these he calls the follicular chancre, as it results from the inflammation and suppuration of a follicle. Its first appearance is in the form of a small ovular excavation, as if a piece had been removed with an instrument. The inflammation extends either gradually or simultaneously to other follicles, and these erosions uniting at their borders, at length form an ulcer of greater or less extent. Sometimes, however, each follicle inflames and suppurates separately, so as to present a patch of chancres. This kind of ulcer is regarded as by far the most common.

The second variety of primitive venereal ulcer admitted by M. Cullerier, is what he denominates the chancre by erosion. It resembles precisely the ulcer occasioned by prolonged or violent friction on a surface badly protected by its epidermis, or produced by superficial inflammation of a mucous membrane running on to ulceration. These ulcers develop themselves upon every part of the glans penis, and especially upon the neck of the uterus. They are regarded by M. Cullerier as manifesting in the highest degree the contagious property.

Both these varieties of chancre may, according to M. Cullerier, either cicatrize in a few days, or assume in the end the characteristics of the Hunterian chancre. That which originates upon the summit of the prepuce, on the skin of the penis, or elsewhere, may, at a later date, take on the characteristics of Carmichael's chancre, with indurated base and elevated edges.

We are disposed to concur entirely in the following views of our author, in regard to the diagnostics of venereal ulcers.

"A good deal has been said of late about chancres of a virulent, as differing from those of a non-virulent character. We have demonstrated the impossibility of establishing any such distinction. Every ulcer seated upon the genitals and following coition, ought to be regarded as of a syphilitic character and treated accordingly, that is to say, opposed by the local and general modifiers until its complete disappearance, and the restoration of the part on which it was situated to its normal condition."

The primary syphilitic ulcer may be healed by two methods, the reverse of each other, that is to say, an antiphlogistic course and topical applications of a soothing kind; or, an opposite plan in which

the inflammation is destroyed at once by recourse to perturbing means; such, for example, as cauterization.

In regard to this last practice, our author makes the following judicious remarks:

"Cauterization at the commencement of a chancre, and before it has acquired the summum of its developement, is a very common practice in the army, as well as among the common people, and with some physicians. But the plan, although expeditious, is accompanied with so much danger that it ought to be reserved solely for a few rare cases, in which the particular aspect of the ulcer, temperament of the patient, and above all, the peculiar circumstances in which he is placed, permit its adoption. It is very certain that a strong cauterization may remove in a few days an ulcer, which, left to itself, or treated rationally, might have required several weeks for its cicatrization. But so many immediate or secondary inconveniences may result from this practice, as to forbid its adoption as a general rule."

If the progress of the inflammation be not arrested at once by the cauterization, it is rendered infinitely more severe, causing a greater destruction of the tissues and a general aggravation of the symptoms. It also tends to the production of buboes with all their unpleasant train of consequences. Our author thinks that the most serious evil arising from the cauterization of a chancre at its début, is the more frequent occurrence of consecutive symptoms to which it gives rise, sooner or later, after an apparent cure. It is proper to remark, that this opinion, so contrary to the views of those who resort to the practice for the purpose of burning out the virus and guarding against secondary symptoms, was also maintained by Dupuytren.

As to the applications of a less irritating nature than lunar caustic, such as stimulating lotions, mercurials, and the like, they are seldom resorted to by M. Cullerier in the commencement of syphilitic ulcers, since they are subject to all the inconveniences of caustics without possessing as much efficacy.

The treatment adopted in the Hôpital des Vénériens, for the removal of primary venereal ulcers, consists in the employment of the general measures for reducing the system which have been already referred to, together with the frequent application of leeches to the groins, perineum, and even to the ulcers themselves, but never to the inflamed skin. The topical modifiers resorted to, consist simply in local bathings, emollient and narcotic injections, cataplasms, and applications of opium cerate. After two or three days of such treatment, actively pursued, our author informs us that the violent inflammation, swelling of the prepuce, &c., by which many of the cases are attended, subside, and that if the employment of emollients and opiates be solely persisted in, no new accidents need be apprehended. When, along with ulcers, there is pain, inflammation, tumefaction, or infiltration of the skin covering the penis, the application of leeches to the perineum or groins, is assisted by emollient local baths, covering the penis with compresses steeped in a narcotic and emollient solution, with anodyne potions at night.

How strongly does this rational treatment contrast with that formerly pursued by almost all physicians, and still practised by many, of covering the sores, and perhaps the whole penis, with mercurial ointment, rubbing with painful industry the same filthy preparation

into the groins, and cauterizing and fretting with stimulant applications, until the inflammatory symptoms are raised to a pitch where disorganization and gangrene are inevitable.

When the syphilitic ulcer continues to resist the general and local treatment recommended by our author, he advises the application of one or two leeches in its centre, to be renewed as often as necessary.

"No other plan," says he, "tends more powerfully to arrest the consequences so likely to result from an excess of inflammation; and when properly made, that is to say, confined to the centre of the ulcer, these applications are attended with not the smallest degree of danger."

In combating the local symptoms, M. Cullerier sometimes applies pure laudanum, or a strong solution of opium in water, directly upon the ulcer. In cases of less severity, he confines himself to applications of cerate containing opium or belladonna.

M. Cullerier very properly condemns the practice of dividing the prepuce in phimosis, for the purpose of getting at the ulcers beneath, since the two sides of the wound, made by the incision, will be imbued with the syphilitic discharge and transformed into chancres, much more difficult to heal than those which led to the operation. The cure of chancres covered by the prepuce, is commonly readily effected by frequent emollient injections containing calomel and the extract of opium. These not only tend to remove the acrimonious discharges, but to reduce the inflammation. When paraphymosis occurs, the strangulated glands must be first reduced in size by means of gentle pressure, after which the prepuce is to be drawn forward, and the glands at the same time pushed backwards. When this is effected the case is reduced to one of phimosis, and treated accordingly.

After the subsidence of the first acute inflammatory symptoms, if the ulcers remain, the next object is to choose such local stimulants as are best adapted to promote their healing. Those most frequently resorted to under such circumstances, in the practice of the *Hôpital des Vénériens*, is the mercurial ointment alone, or reduced in strength by admixture with a certain proportion of cerate; pledgets of lint steeped in a solution of mercury, acetate of lead, or sulphate of copper; an ointment of the proto-ioduret of mercury, calomel in powder, &c. Where still stronger applications are required, slight cauterization with nitrate of silver is resorted to, or, what is more frequently used, a solution of corrosive sublimate in the proportion of ten grains to the ounce of distilled water.

Certain ulcerations to which the female organs are subject, require some peculiarities of treatment, not such ulcers as are of ordinary occurrence about the entrance of the vagina, but those which are revealed around the neck of the uterus by the use of the speculum. Every female entering the *Hôpital des Vénériens*, with any external venereal symptom, is subjected to exploration by means of this instrument. Even where no external signs of disease appear, and yet persons having had connexion with them contracted disease, the speculum is applied, and generally succeeds in developing the existence of disease about the neck of the uterus.

"Sometimes," says our author, "the neck presents only a bloated appearance, being red, swelled, and, as it were, hypertrophied, but not ulcerated; or, at least, if some erosions exist, they are so minute as scarcely to be perceptible to the eye. This tumefaction of the neck of the uterus, nevertheless, appears of a syphilitic character, and capable of developing ulcers on the penis by contact."

The ulcers occurring in this part, our author regards as bearing a strict resemblance to chancres on the penis. In addition to the means adapted to similar affections of the male organs, he recommends at first emollient injections, followed by the introduction to the bottom of the vagina of tents of lint imbued with similar washes. These emollient applications are subsequently succeeded by others of a more active kind, containing Goulard's solution, calomel in powder, and in fact all the local modifiers mentioned as adapted to the treatment of chancre of the penis. The ulcerations about the neck of the uterus, according to our author, show great resistance to the healing process, and are seldom completely cured in less than two or three months; whereas those on the penis seldom require a longer period than from three to five weeks. Query, what obstructions to healing may be opposed by the frequent introduction of the speculum, and the tents of lint?

The next primary syphilitic symptoms which we come to notice, is bubo. Although generally the accompaniment or immediate successor of chancre, bubo is sometimes an attendant upon gonorrhœa. Our author thinks, that in this last case, there is commonly an ulceration in some part of the urethra. We ourselves think that the high state of inflammation to which the delicate mucous tissue lining this canal is subject, is sufficient to rouse the neighbouring glands into diseased action, and that buboes accompanying gonorrhœa are not to be regarded as the common evidences of an existing ulcer.

Our author makes a general division of buboes into three kinds, according to the tissues in which they are developed. Where the effect of the irritation is confined to the inguinal glands, he denominates the tumour *glandular bubo*. Where, as occasionally happens, the swelling is confined to the cellular tissue of the parts adjacent to the penis, he calls it a *phlegmonous bubo*. His third species consists in the engorgement of the lymphatic ganglions and cellular tissues, on which account he calls it *mist*. The phlegmonous bubo may establish itself at any point on the anterior part of the pelvis endued with cellular tissue, as for example, at the root of the penis, middle of the pubis, in the groins, and in the hypogastric region, far from the genital organs. But those phlegmons which depend upon the direct influence of a syphilitic ulcer, and which thus form separately from the lymphatic ganglions, are, our author informs us, only met with existing very superficially. For when the cellular tissue of the deep parts of the pelvis become engorged and converted into an inflammatory tumour, it is always in consequence of the extension of inflammation from the inguinal lymphatic glands.

It is a popular opinion, which we regret to say is also maintained by some physicians, that buboes should always be encouraged to suppurate, so that the virus may be thus discharged from the system.

We entirely agree with our author, that their resolution should invariably be obtained when possible, as their suppuration is nearly always attended with very inconvenient and often serious consequences. With all those who have adopted a rational plan, and laid aside the old mode of treating recent buboes by the internal administration of powerful irritants, and the external application of forcible frictions with mercury, their suppuration is happily of rare occurrence, and only takes place when some causes exist to counteract the effects of the treatment.

Our author refers to two methods of practice adopted for the treatment of recent inflammatory bubo, the one being of a purely antiphlogistic character, the other revulsive and perturbing. The first embraces local and general sanguineous emissions; narcotic and emollient applications, local bathing, &c., whilst the second includes the use of topical refrigerants, especially the application of ice, blisters, &c., with other means of affecting revulsion. Which ever plan be followed, it is proper to add, that regimen, and rest in bed, are indispensable to the proper treatment of inflammatory bubo. Every means which has a tendency to produce stimulation in a greater or less degree, especially the use of mercurials and other applications, supposed to be endowed with specific effects, should be scrupulously rejected during this stage of the bubo, which ought be viewed as a case of simple inflammation, and without regard to any peculiarity in its origin.

When by means of regimen, rest, and sanguineous evacuations, both general and local, proportioned to the strength of the patient, and severity of the case, the engorgement of the inguinal tumour has been sufficiently accomplished, our author recommends, for the purpose of favouring the resolution still more, the application of flaxseed meal poultices, which he thinks contribute to dissipate the swelling without favouring the production of pus. In warm weather the poultices should be applied cold, to obviate in some measure their rapid tendency to become acid. Along with these topical applications, hip-baths are recommended, in which the patients may remain several hours every day in obstinate cases. Baths also contribute to produce the resolution of bubo, but they are to be regarded rather as general than local modifiers.

Our author informs us, that when patients are willing to submit to the precautions which this mode of treatment requires, and retain the ice constantly upon the inguinal region, it is a powerful means of affecting discussion. He, however, thinks it less applicable to the primary stage of bubo, than to the period when the tumour, passing from its chronic state, requires to be stimulated to reanimate the activity of the absorbent vessels. The treating of buboes on the revulsive plan by applying ice and blisters, is strongly recommended on the score of economy; for it must be confessed, that the mode of reducing inflammation by means which embrace the frequent application of leeches, is attended with very serious expense, not only in hospitals, but in private practice. In regard to the advantages to be

derived from blistering the surface of primary buboes, we are enabled to join our testimony to that of the author.

Sometimes the bubo instead of being discussed, or terminating by suppuration, loses its sensibility, warmth, and other characteristics of inflammation, and remains a hardened lump, being now what is commonly called an indolent or chronic bubo. In this state it requires a treatment altogether different from the inflammatory tumour; and instead of having its supplies of blood lessened, and all exciting agents removed, means must be resorted to for restoring a certain degree of activity to the tissues. But the chronic bubo is not to be regarded as entirely indolent, and under such an impression stimulated unduly, since it is always in a condition which renders it liable to pass suddenly into a subacute state, followed by suppuration with all its inconveniences. It is upon the application of irritants to the skin, that our author chiefly relies in the treatment of indolent bubo; and blisters constitute his main dependence, although there are other means that may be usefully resorted to. Among these we may mention frictions with mercurial ointment, or with an ointment composed of hydriodate of potass and hog's lard, in the proportion of ʒj. of the former to ʒij. of the latter, &c. &c. The method of restoring action to a chronic engorgement by cauterization over its centre, is, however, regarded by our author as the most effectual.

Of all the forms of bubo, the one under consideration is that which most frequently demands the internal use of the general modifiers, and, although, according to our author, mercury claims the highest rank, the preparations of iodine, brome, gold, tisan de Feltz, &c. may be often substituted.

Such is the repugnance of M. Cullerier to the suppuration of buboes, that even when these present themselves with evidences of pus existing in small quantity, he attacks them by active antiphlogistic means, with the view of either reducing them entirely and effecting the absorption of the pus, or limiting the formation of this so that a very small puncture will suffice for its discharge. Whenever it becomes absolutely necessary to open buboes, he prefers effecting this by a moderate incision, rather than by cauterization. His leading object appears to be to avoid any further solution of continuity than is absolutely necessary to admit the escape of the pus. In accordance with this view, he is generally satisfied with an opening of a few lines in extent, made with the point of a lancet.

Our author has devoted considerable space to the consideration of ulcerated bubo, with the various obstacles which obstruct cicatrization, such as those depending upon the ulcer itself, the condition of its borders, and the state of its bottom, together with the various means commonly resorted to in the practice of the Hôpital des Vénériens, for their removal. In concluding his chapter upon this subject, he demands particular attention to one practical point, a knowledge of which he thinks indispensable to the cure of ulcerated syphilitic bubo: namely, that it is impossible to determine by simple inspection what topical application will soonest restore healthy action

to the ulcer, and produce its cicatrization. One substance must be used first, then another, afterwards a third, and so on, according to the prescribed rules, until an article is at length found suited to the nature of the ulcer. It is the same with medicines applied internally in every kind of syphilitic affection. From all this, it may, we think, be inferred, that the chief improvements which the practice in venereal diseases has undergone of late years, is confined to the primary stages.

With respect to gonorrhœa, M. Cullerier is among those who maintain that its character is altogether different from that of the primary ulcer. The secondary symptoms, by which gonorrhœa is frequently followed, are ascribed to ulceration existing in some portion of the mucous surface where they are usually invisible. The general and local means which he calls in requisition for the treatment of this affection of the mucous membrane are of the same kind as have been recommended for the treatment of the primary syphilitic ulcer. In addition to these, he advises an application of leeches to the perineum, groins, root of the penis, course of the urethra, and, when the inflammation is violent, to the summit of the glands; local baths, emollient and narcotic fomentations, oily embrocations, and emollient cataplasms, are also resorted to. The practice of applying leeches upon any portion of the penis, is, we think, objectionable, on account of the danger arising from the contact of the discharge with leech bites. Our objection applies with peculiar force to placing them upon the glands; and they should, we think, be confined to the perineum and groins.

"These means," our author informs us, "are sometimes sufficient to cure the patient. It however usually happens, that the pain abates, the free course of the urine is restored, the discharge becomes whitish and thicker, but still the disease would be protracted indefinitely, unless recourse was had to a different treatment, the efficacy of which has been demonstrated by experience."

The treatment to which he alludes, consists in the exhibition of terebinthines, astringents, and cubebs. With regard to injections, our author reprobates their use, whether consisting of simple warm water, or solutions of astringent or other matters, in the most unqualified terms, as highly detrimental in every stage of the disease.

"The only means," says he, "of hastening the cure of urethritis at its début, is to persevere with energy in the use of sanguineous emissions. One or two bleedings from the arm, and three or four applications of leeches to the perineum, may subdue the inflammation in a few days. We have seen numerous examples of the efficacy of this practice, which is assuredly the best plan to pursue when patients are very urgent in their desire to get rid of the disease in a few days."

We cannot assent to the sweeping denunciation made by M. Cullerier against injections of all kinds in every stage of the disease. We maintain, on the contrary, that injections of warm water, warm milk and water, flaxseed tea, mucilage of the pith of sassafras, and weak solutions of opium in water, often tend greatly to relieve the primary symptoms of urethritis. But they should seldom, if ever, be relied upon as sufficient of themselves to reduce the local inflammation, which is to be mainly conquered by general and local anti-phlogistic means. Much injury is often done to the very delicate

mucous coat at the extremity of the urethra by the rough manner in which the injection is administered. Too great delicacy cannot well be observed in the operation. In the chronic forms of gonorrhœa and in gleet, injections judiciously made, often produce the most happy modification in the condition of the mucous membrane, and never, in our practice, have we known them followed by any of the bad effects usually ascribed to them. But then we take care to use them very weak, and always proportioned to the irritability of the surface with which they are brought in contact. The mischief we have observed to follow the use of injections in the practice of others has always arisen from the improper employment of irritating solutions applied too soon, or when prescribed in the chronic forms, made of too great strength. We were not a little surprised to find M. Cullerier countenancing in any manner the vicious practice sometimes resorted to of inoculating with recent gonorrhœal matter for the cure of obstinate chronic discharges from the urethra, since inflammation of the mucous membrane sufficiently acute to supersede the chronic action, could be so readily roused by other means less objectionable.

M. Cullerier regards orchitis as arising, not from a metastasis of the inflammation of the urethra, but by its regular extension in a train along the vasa differentia to the epididymus and even the testicle itself. In support of this conclusion, he observes, that the discharge from the urethra is seldom entirely suppressed, although it is always diminished in quantity. This view of the pathology of orchitis has certainly one good practical effect, namely, to show the mischievous folly of those who introduce bougies for the purpose of irritating the urethra and thus bringing back the inflammation.

The particular treatment of orchitis does not differ essentially from that recommended for other affections of an acute inflammatory character.

Before concluding his book, our author notices several of the sequelæ of syphilis, such as pustular affections, vegetations, condylomata, cutaneous disorders, ulcerations of the mucous tissues, syphilitic enlargement of the testicle, affections of the osseous and fibrous tissues, syphilis occurring with infants and their nurses, &c. But we have dwelt already too long on the main topics of his work to allow of any particular notice of these subjects. Our great object has been to make our readers acquainted with the practice in syphilitic affections pursued at present in one of the most extensive hospitals in Europe, under the superintendence of a surgeon whose name has been invested with almost oracular authority. May his leading views tend to modify the practice of those who have not before emancipated themselves from the doctrines and treatment formerly maintained and followed with such evil consequences.

G. E.

BIBLIOGRAPHICAL NOTICES.

ART. XII. *Maladies de l'Utérus, d'après les Leçons Cliniques de M. LISFRANC, faites à l'Hôpital de la Pitié.* Par H. PAULY, Paris: 1836. 8vo. pp. 536.
On Diseases of the Uterus, from the Clinical Lectures of M. LISFRANC. By H. PAULY.

Professor Lisfranc, the surgeon in chief to the Hôpital la Pitié at Paris, is well known as having devoted himself in an especial manner to the study of diseases of the uterus. His wards contain at all times a large number of interesting cases of these affections, and for some years past he has regularly delivered a course of instructive clinical lectures upon them. With the exception of a chapter "on the value of the operation of amputation of the neck of the uterus," the work before us is nothing more than an exposé of the well known principles emitted by the Professor in these lectures. It is divided into four parts. In the first is given the surgical anatomy of the organs of generation in the female, and the proper mode of exploring them. The second is devoted to the consideration of diseases of the uterus in general; their causes, symptoms, prognosis, progress and treatment. The third contains the history of healthy and diseased menstruation, fluor albus and hysteria; and in the fourth, sub-inflammation without engorgement, hysteralgia, engorgements of the uterus, ulcerations and amputation of the neck, complete extirpation of it, and polypi, are successively noticed.

It is not our intention at this time to present to our readers an analysis of the views and treatment of M. Lisfranc in all of these different affections of the female. Our examination will be confined to the important chapter on amputation of the neck of the uterus, and to the value of the statements made by M. Lisfranc concerning it. This operation, though recommended by Lauvariol as early as 1780, was first performed by Osiander in 1801. He operated on twenty-eight cases, but, for some time previous to his death, is said to have entirely abandoned the practice. Soon after the publication of his first operations, M. Dupuytren introduced it into France, and performed it fifteen or twenty times; but notwithstanding that he had shown himself its partisan, and had gained much of his early celebrity from it, he likewise discontinued the practice, which was soon after generally abandoned. In 1826 M. Lisfranc revived it, and by the reputation that he had already acquired from his researches on the surgical anatomy of the female generative organs, as well as by his skill and celebrity in the treatment of their diseases, he succeeded in bringing it into much more general notice in France, and in making it more extensively known abroad than it had ever previously been. From the period of its revival up to the present time, he has continued to advocate the operation in his lectures, and on various occasions at the sittings of the Academy of Medicine, has shown himself its warm supporter and defender. All the results, too, which have been announced in relation to the great benefits derived by the patient from its performance, as well as the trifling mortality attending it, have been drawn from cases occurring in his practice, and made known with his approbation. A summary of these he himself presented to the Academy of Sciences of Paris, in 1831, on the occasion of his becoming a candidate for the vacancy caused by the death of Dupuytren, thereby publicly showing that he became responsible for the truth of them.

According to M. Lisfranc, excision of the neck of the uterus may be performed whenever cancer is well characterized, whatever be its stage, provided the disease affects the neck of the organ only. This can be ascertained by the use of the speculum; by being able to pass the finger above and around the diseased portion; by examination per anum; and, lastly, by the degree of mobility of the organ.

The existence of enlargement of the body of the uterus to a moderate degree, he does not consider as alone sufficient proof of its being affected similarly to the neck in cases of cancer. Dissections have shown him the neck of the organ entirely destroyed by ulceration, without the body of it participating in the disease, other than by being simply engorged in consequence of the long continued irritation. The same state invariably accompanies polypus of the uterus and deep seated inflammations of the pelvis, and diminishes, and finally disappears, after the cure of these affections.

Neither does M. Lisfranc consider engorgement of the ovaries as an obstacle to the performance of the operation, provided the constitution of the patient remains good, and the enlargement be not to a great extent. He says: "In one case, in which the right ovary was four times larger than natural, I amputated the neck, and at the end of six years the tumour continued stationary, under an appropriate treatment."

Ulcers of the neck of the uterus, though not cancerous, he thinks, call for its amputation, if of long standing and rebellious to other modes of treatment, as experience daily shows that simple ulcerations of that part are sometimes incurable by any applications that can be made to them, and may even take on a cancerous appearance and prove fatal, if not arrested in their course.

One of the strongest *a priori* objections made to the performance of the operation, arises from a belief that when the os tinea is affected by cancer, the body of the uterus must necessarily be similarly diseased. This objection is specious, but, according to our author, is contrary to pathological observation, which shows the neck to be generally the part first and most affected in cancer uteri. For a very long time, too, the disease is limited solely to it; and this explains, says M. Lisfranc, why the success obtained is so much greater after operations for cancer of the uterus, than after the removal of similar disease from other parts. Bayle long since noticed the fact that cancer of the womb produces engorgement of the tissues near to it much less frequently than in any other part of the body; and we may add that our own examinations in a limited number of cases, go to confirm the correctness of the observation. Before deciding upon the operation, M. Lisfranc directs that we should be assured that there exists no chronic inflammation of the peritoneum, or gastro-intestinal mucous membrane, or affection of the chest, to contra-indicate it. This we should think very important, though it does not appear that he himself is invariably deterred from operating by the existence of any of these affections, since it is subsequently stated that he lost two patients forty-eight hours after the amputation, in cases where chronic peritonitis previously existed, and took on an acute form after it.

Nervous palpitations of the heart are frequently attendant upon diseases of the uterus, and cease after the operation. The following is an interesting example of this.

"Eight years since, at the Hôpital St. Come, a patient was affected with ulceration of the neck of the uterus, and at the same time suffered from very violent palpitations of the heart. MM. Landré-Beauvais and Laënnec saw her at my request, and pronounced her to be labouring under aneurism of the left ventricle. Nevertheless, as her life was immediately menaced by the rapid progress of the cancer, she decided upon having the operation performed. Four days after it all affection of the heart had disappeared. She afterwards became a mother, and enjoys at this time (1831) good health."

The mode of operating adopted by M. Lisfranc, is based on two material points of surgical anatomy. 1st. The breadth of the insertion of the vagina upon the neck of the uterus; and 2nd. The mobility enjoyed by the uterus, which permits its extremity to be drawn down to the vulva without danger. The breadth of the insertion of the vagina on the neck of the uterus varies from six to fifteen lines;* and the distance between the extremity of the neck and peritoneum, is nine lines on its anterior, and ten on its posterior surface. These measures are said to have been fixed after examination of more than a hundred healthy subjects for this special purpose; and, if correct, prove that excision of three-quarters of an inch of the neck may be made without fear of opening the cavity of the peritoneum.

In operating M. Lisfranc draws the uterus by means of strong hooks or the forceps of Mouxes gradually to the external orifice. Once brought down, it is held in that situation by an assistant, while the surgeon passes the fore-finger of his left hand behind its neck, as well for the purpose of holding the part firmly, as to measure the point at which the section is to be made. Every thing being thus prepared, the diseased part is separated by means of a curved blunt pointed bistouri; this division is difficult on account of the great resistance offered by the dense tissue of the uterus, and should be made slowly and by small strokes of the instrument, in order to prevent injury to the peritoneum, the exact situation of which, in regard to the part affected, must at all times be remembered.

The shock given to the nervous system by the operation is sometimes great; and the nervous and hysterical symptoms, such as a sense of suffocation, spasms of the extremities, spasmodic vomiting, &c., which follow it, alarm the attendants, and might indeed, at times, the operator, had he not previously witnessed or been led to expect them; these, however, are said not to be really dangerous, and are to be treated by warm external applications together with diffusible antispasmodics and opiates, administered by the mouth or rectum.

M. Lisfranc asserts that he has amputated the neck of the uterus in ninety-nine cases; of this number fifteen† have died, and eighty-four have been successful. Of the deaths, four were from metro-peritonitis. He has never lost one from hemorrhage, and has been obliged to use the tampon but six times in the ninety-nine cases. Ten of the patients operated on became afterwards pregnant, and of these only one aborted; and she committed imprudences which, in other cases, would have been sufficient to have caused it.

Such are the results of amputation of the neck of the uterus, as proclaimed by M. Lisfranc. They show the operation not very difficult of performance, unattended by much pain, and offering a cheering prospect to both surgeon and patient. The age and high standing of the Professor were deemed a sufficient guarantee for the entire correctness of any statements made by him; and his results in this operation have long since been made known through the medium of the different periodicals. Doubts, however, arose in the minds of those around him in regard to their truth; and in 1833, whilst these were most rife, the author of the work before us became his assistant and first prosecutor at La Pitié. On first entering upon his duties, M. Pauly undertook to collect and publish the clinical lectures delivered at the hospital on diseases of the uterus, and for this purpose assisted at all his operations and attended to their after treatment.

"Every amputation of the neck of the uterus," says M. P., "offered to me a victim, and results so different from those that I had heard announced by M. Lisfranc, threw me into a painful uncertainty; and notwithstanding his entreaties I delayed the publication of my book."

* The measures are French.

† In this number are comprised the cases in which there was a return of the disease.

In 1835, M. Pauly was charged to make out a list of the cases successfully amputated to present to the institute, and the researches made for this purpose resulted in his relinquishing all idea of publishing and becoming responsible for the statements of M. Lisfranc; though, at the same time, he deemed it his duty to dissipate the cloud that enveloped this point of surgery, by proclaiming the truths with which his intimate connexions with M. Lisfranc had made him acquainted.

The following are the conclusions arrived at by him in regard to the operation. They are drawn from an inspection of M. Lisfranc's own records; examination of the different theses and cases published by his early pupils; accurate inquiries concerning persons said to have been cured by it; and the author's own personal knowledge of all the cases, both hospital and private, operated on during his three years of internship. As will be seen, they are sadly at variance with those announced by the Professor, and up to this time no sort of explanation or contradiction of them has been given.

1st. The statements made by M. Lisfranc to the Academy of Sciences of his having up to the 2nd of June, 1834, operated upon ninety-nine cases is untrue; the whole number of cases, successful and unsuccessful, up to the 1st January, 1836, being only fifty-three.

2nd. No positive conclusions can be arrived at in regard to the degree of success had in the hospital, inspection of the records having been denied to him.

3d. Of the nineteen cases operated on in private practice, one only has derived any benefit from the operation.

4th. Of these nineteen cases, four have died within twenty-four hours, twelve from an immediate return of the disease, and in the two other cases the disease having been only partially removed, has gone on to a fatal termination, with increased rapidity.

5th. Of the nine cases in which he saw the operation performed, and upon which he remained in attendance during the first twenty-four hours, six have had formidable hemorrhagies; and of these six, three have died within the twenty-four hours.

It is impossible, we think, to be too cautious in receiving the statements of one who uses knowledge obtained under the mask of friendship, to the injury of a preceptor and former friend. At best it is a gross breach of confidence, and we hold the author, who is guilty of it, in slight estimation; though, as public journalists, we have felt ourselves bound to promulgate the fact of the assertions of M. Lisfranc being thus openly called in question, and to state that sufficient proof has been given to show that the number of cases reported by him, has been exaggerated; the dangers of the operation misstated; and its fatal results made out as vastly less frequent than in reality they are.

G. W. N.

ART. XIII. *Recherches sur quelques uns des accidents cérébraux produits par les préparations saturnines.* Par A. GRISOLLE, Docteur en Médecine, chef de clinique de la Faculté de Médecine à l'Hôtel-Dieu; titulaire de la Société Médical d'observation; membre honoraire de la Société Anatomique; correspondant de l'Académie de Médecine de Marseille, &c.—Extrait de Journal Hebdomadaire des Progrès, &c. Décembre, 1836. Paris, 1836.

Researches upon some of the Cerebral disorders produced by the preparations of Lead. By A. GRISOLLE, Doctor in Medicine. Paris, 1836.

In a former number (November, 1836) of this journal, we noticed the thesis of Mr. Grisolle upon lead colic, which has gained for him great and deserved reputation. The present essay is devoted to the consideration of the effects

produced by the introduction of various preparations of lead into the economy, when their action is directed towards the central nervous system. These effects consist of various disorders of the voluntary movements, of the general sensibility, of the intellectual and sensorial functions, &c. As the nature of the affection of the brain which results from the action of lead is entirely unknown, our author has not ventured to designate it by any particular name, but has employed the general phrase "cerebral disorders from lead;" (*accidents cérébraux saturnins.*) These symptoms occurred in ten out of eighty individuals affected with lead colic. Monsieur Grisolle first endeavours to determine how far certain conditions of the system and other circumstances are calculated to favour the operation of lead upon the central nervous system. Of the twenty-nine patients thus affected nine were between the ages of twenty and thirty, and eleven were between thirty and forty; and hence he concludes that those persons who are between twenty and forty years of age are more liable to be thus affected than at any other period of life. But before such a conclusion can be admitted, we must be informed of the comparative number of workmen of different ages employed in the manufactories whence the greater part of the above patients were derived. In the absence of positive information on this point, we may remark that it is highly probable that the great majority of the workmen employed were between the ages of twenty and forty, and if so, the inference of our author falls to the ground. Whether our supposition, however, be correct or not, the fact ought to have been noted as forming a necessary part of the calculation, and this leads us to observe, that the numerical system or calculation of probabilities, however sound in principle, is liable to great abuses in practice. In order to arrive at correct results through its means, every circumstance which can materially affect the calculation, should be scrupulously taken into the account, and without this precaution, the method alluded to, although so fruitful in important results when cautiously employed, may lead to the most gross and serious error both in theory and practice.

From the observations of Dr. G., it appears that the action of the red oxyd of lead upon the nervous system, is both more prompt and more powerful than that of the subcarbonate, for among the workmen exposed to the action of the former, the nervous symptoms made their appearance much sooner, and were more rapidly fatal than among those employed in the white lead factories.

It is well known that previous attacks of lead colic predispose to paralysis of the limbs, and the same seems to be the case as regards the acute nervous affections, which we are now considering. One thing, however, is very singular, which is, that these symptoms, although occurring more frequently among persons who have previously had one or more attacks of lead colic, are, nevertheless, less severe under these circumstances than when the individual had been previously free from the disease.

As regards the influence of sex and constitution as predisposing causes, he is not able to arrive at any conclusion.

As regards the exciting causes, Mr. G. observes that it is impossible to say positively that an attack of colic is always the exciting cause of the cerebral symptoms, since in four of the cases these symptoms made their appearance without having been preceded by enteralgia. Nevertheless, it must be admitted that in almost every case they do supervene upon those of colic. The severity, however, of the abdominal affection appears to bear no proportion whatever to that of the cerebral symptom, which frequently supervened in cases when the former were of the very mildest character, and as often proved fatal in the one case as the other.

The cerebral disorders produced by the action of lead upon the central nervous system, assume a variety of forms, which, for the sake of description, Mr. G. classes under three different heads, viz: 1st. Delirium. 2nd. Convulsion

or epilepsy. 3d. Coma. It is rare, however, that the disease preserves any one of those forms completely throughout its whole course. Most commonly the one is replaced by the other without any regular transition, such as is found in most other acute affections of the brain, so that the coma, the convulsion, and the delirium may mark indiscriminately either the commencement or termination of the disorder. After detailing the histories of a number of cases of the disease, our author proceeds to give a general description of it under the different heads above mentioned, and first when it assumes the form of

Delirium. This occurred in seven out of the twenty-nine cases which form the subject of the present memoir. In these seven cases the delirium marked the commencement of the affection, and was the predominant symptom throughout its whole course. In four cases it made its appearance whilst the patients were labouring under the most violent abdominal symptoms, whilst in the three others it occurred spontaneously at a time when the abdominal pain had ceased, when the regular action of the bowels had been established, and every thing promised a rapid convalescence. Hence, it is concluded that the delirium is not sympathetic. Its ordinary precursors are head-ache, vertigo, and acceleration of the pulse. It varies very much as to its character, but is generally furious. Although occasionally intermittent, it mostly assumes a continued form, accompanied by irregular exacerbations, which do not always occur during the evening and night, as in febrile affections. During these exacerbations the ideas are incoherent; the patient utters piercing cries, his eyes are haggard, and his paroxysms of fury are so violent that he attacks his attendants; at other times he is frightened and affected with hallucinations. In some these symptoms gradually disappear, whilst in other cases the patient falls asleep, from which he awakes with his intellectual faculties perfectly restored. In this state he may remain for several hours, or even several days, when, without any apparent cause, the same symptoms reappear. There certainly seems to be much analogy between this form of the disease and delirium tremens. In two of the above cases amaurosis was developed and continued some time after the delirium had ceased. Four out of the seven terminated fatally. The *convulsive or epileptic form* of the disease is the most common as well as the most severe of all, for eleven out of fifteen patients thus affected died. Here the patient falls down deprived of consciousness, the general sensibility is destroyed, without convulsions. After a partial recovery from this condition, which commonly lasts several hours, a second attack comes on, accompanied usually with convulsions, the limbs become rigid, face distorted, &c. These attacks are repeated more and more frequently until the patient falls into a state of coma and perfect insensibility. These convulsions, so fatal to man, are not less so to the domestic animals which frequent the manufactories. The *comatose form* occurred in five cases. One of these was attacked in the midst, apparently, of the most perfect health; the others fell into this condition during the course of an attack of lead colic of slight severity, and which was rather on the mend than otherwise. This state of things was preceded by no symptom which leads to the suspicion of its approach except in one case where the unfortunate workman was suddenly struck with blindness.

The three forms of the disease may be combined together or follow one another in the same individual. The duration of the disease is generally short, varying, however, according to the form which it assumes. Relapses are not unfrequent.

Two of those who recovered were affected with paralysis of the limbs, which lasted several months; and one woman was seized with amaurosis, which was never cured. Paralysis of the limbs, or of one or other of the senses, appears to be the only accident which follows as a consequence of the cerebral disorders of which we are speaking. Notwithstanding the analogy which exists between the epileptic form of the affection and genuine epilepsy, this latter

never occurs as a consequence of the former. It is remarkable, too, that those persons who have been subject to epilepsy for many years, and are employed in the lead manufactories, do not find their attacks either more violent or more frequent. Mr. G. further observes:

"That he does not know of a single instance in which an epileptic patient has been cured by a mere residence in the manufactories, and yet this happy result ought frequently to take place if the doctrine of Hahneman be true, for by their residence in a manufactory of white or red lead, epileptic patients are subjected to the two fundamental conditions of all homeopathic treatment."

There is nothing in the character of the cerebral symptoms which we have been considering, which is absolutely peculiar to them, and our diagnosis must be mainly founded upon our knowledge of the circumstances in which the patient has been previously placed, and especially upon the previous existence or simultaneous occurrence of lead colic. The delirium, as was before mentioned, resembles, in some respects, delirium tremens, and might sometimes be confounded with it. In the former we do not often find that trembling of the limbs and lips and the uncertainty of voice which so constantly attend upon the latter complaint.

The prognosis is very unfavourable, since nearly two-thirds of the patients die. It becomes more favourable the longer the patient survives, and it is rare for any one to die after the sixth or seventh day; for, in the immense majority of cases, death takes place during the first two or three days, or even within a few hours after the beginning of the attack.

In a great majority of the cases, post-mortem examination discovered no appreciable lesion in the central nervous system. In nearly one half, however, of those who died, after having suffered under the epileptic form of the disease, the circumvolutions of the brain were remarkably flattened and the anfractuosities partly obliterated, so that in some cases the hemispheres presented almost an even surface. Hence it is evident that the volume of the brain was augmented, and as the above condition of things was not accompanied either by serous effusion into the ventricles or sanguine congestion, we must admit an absolute hypertrophy or turgescence of the cerebral substance itself.

As regards the nature of the disease, Mr. G. is altogether unable to arrive at a satisfactory conclusion. He thinks, however, that it is not inflammatory, because during life it is not accompanied by fever, is frequently intermittent in its course, appearing and disappearing suddenly without any evident cause; and because, after death, the brain is found either perfectly healthy or free from any lesion which can be looked upon as the result of inflammation.

The treatment must vary according to the form which the disease assumes; all exclusive plans of practice must be discarded. When it shows itself, however, at the same time that the patient is labouring under an attack of lead colic, our attention should be especially directed to the cure of the latter.

Of the efficacy of bleeding in relieving the cerebral symptoms, Mr. G. does not speak in high terms. Although it is proper to abstract blood when the pulse is hard and full, and especially if it be increased in frequency, still, great caution should be exercised; for, on several occasions, venesection was followed by an increase of the symptoms even in cases where the redness of the face and eyes led to the suspicion of cerebral congestion. In no instance did any amelioration follow its employment. Where delirium is the prominent symptom, Mr. G. advises the use of opium, and says, that we must not be afraid of a slight degree of narcotism, which is calculated, in fact, to favour the cure. "Commonly," he says, "the patient sleeps soundly, and upon waking up finds his intellectual faculties restored."

The convulsive form of the complaint is altogether the most intractable. Dr. G. speaks in high terms of cold affusions which were employed in three cases, two of which recovered, and the third was temporarily relieved. In the two

former the paroxysm ceased immediately after the affusion; the patients went to sleep at once, and upon awaking, their intelligence was nearly restored. The affusion should be employed in the interval of the paroxysm, and should be continued for several minutes.

Where coma exists, external revulsions, and especially blisters, are among the most powerful mean which we can employ. It exerts but little effect, however, says our author, when applied to a part considerably distant from the brain. The scalp should be shaved and a large blister applied to its surface. Cold affusion is here, also, sometimes applicable; but it must be more cautiously employed than in cases where delirium or convulsions exist.

T. S.

ART. XIV. *Medico-Chirurgical Transactions, published by the Royal Medical and Chirurgical Society of London, for 1836. Volume the twentieth.* London: 1837. 8vo. pp. 402.

We resume our analysis of the present volume of the *Medico-Chirurgical Transactions*, the first eight articles of which were very fully noticed in our last number. The paper next in order, the ninth, is entitled, "*Pathological and Surgical Observations relating to Injuries of the Spinal Cord.*" By Sir Benjamin C. Brodie, Bart., F. R. S., &c.

This, in almost every point of view, is certainly the most interesting of the seventeen papers which the volume comprises. In relation to the injuries to which, from various causes, the spinal marrow is liable, the phenomena to which these injuries give rise, their relative importance, and the means best adapted for their removal or relief, but little practical or satisfactory information is to be derived from any of the surgical treatises ordinarily consulted by students and practitioners; hence the increased value of the observations detailed in the paper before us, which present a brief but very satisfactory review of each of the above particulars, the name of the author being alone a sufficient guarantee for the general accuracy of his statements and deductions.

We regret that our limits will not permit us to give a full analysis of this excellent paper, which occupies forty-seven pages of the volume before us, and comprises a series of practical observations, derived almost exclusively from the author's own experience. The injuries treated of are—1st. Fractures of the vertebrae without displacement. 2nd. Fractures with depression or displacement of the bone, diminishing the diameter of the spinal canal, and causing pressure on the spinal cord. 3d. Fractures with dislocation. 4th. Simple dislocations. 5th. Extravasations of blood on the surface of the membranes of the cord; which, according to the author, are comparatively of rare occurrence. 6th. Extravasation of blood within the substance of the cord. This extravasation is always of a very small extent, but from its peculiar situation may be productive of the most dangerous symptoms. 7th. Laceration of the spinal cord and its membranes, varying in extent. 8th. Injury of the minute organization of the cord, from a blow inflicted upon the spine, without either fracture or dislocation, and where the investing membranes do not appear to participate in any way in the effects of the injury.

"In such cases, if there be an opportunity of examining the spinal cord at a very early period after the accident has occurred, the central part of it is found to be softer than natural, its fibrous appearance being lost in that of a semi-fluid substance. If the patient survives for a longer period, the alteration of structure is perceptible in the whole diameter of the cord, and occupies from one to two inches, or even more, of its length; and at a still later period it has often proceeded so far as to terminate in its complete dissolution.

"This disorganization, softening, and final dissolution of the spinal cord, is the most common consequence of injuries of the spine; and the dangerous symptoms which follow these accidents, are, in the majority of cases, to be attributed to it."

"The effect of a violent concussion is at once to impair, and even to destroy the functions of the spinal cord, sometimes even causing the patient's death in the course of a few hours; and the question here presents itself—What is the nature of the injury thus inflicted on the spinal cord, so trifling in appearance, so great in reality, which is capable of producing such important and dangerous consequences?"

The author regrets that he has neglected, where a patient has died at an early period after an accident of this kind, to prepare the cord by maceration in alcohol, and endeavour, by tracing its fibres, to ascertain in what respects they are altered from their natural condition. The process of softening and dissolution of the cord, which takes place subsequently, has been regarded by some pathologists as the consequence of inflammation; but a consideration of the following circumstances leads Mr. B. to doubt the accuracy of this conclusion.

"1st. A minute examination of the injured part of the spinal cord will often enable us to detect the commencement of the softening process at a very early period, before sufficient time had elapsed for inflammation to become established, and before any symptoms of inflammation had shown themselves. 2ndly. The softened part of the cord, in the first instance, exhibits no appearance of increased vascularity. 3dly. Even where the softening process is so far advanced as to occasion complete disorganization of the spinal cord, the investing membranes, for the most part, exhibit their natural appearance, there being neither increased vascularity, nor the slightest effusion of lymph, or serum, or pus on their surface. 4thly. The symptoms, which mark the progress of these changes, are merely a continuation of those which the concussion of the spinal cord has occasioned in the first instance; and which, of course, must have been wholly unconnected with inflammation.

"It is true that the disorganization of the spinal cord never proceeds to any considerable extent, without an enlargement of the small vessels being perceptible, such as may be supposed to indicate the existence of inflammation; but this is no more than what happens in the progress of any other disease."

"Although the softening of the spinal cord is not the consequence of inflammation, we must not overlook the circumstance, that inflammation of the investing membranes sometimes exists in combination with it, or that such inflammation may take place where the cord is little or not at all affected in this manner. Inflammation, however, is to be regarded as one of the secondary effects of the injury."

"The peculiar symptoms which arise as an immediate consequence of injury of the spine, may be referred, 1st. To concussion of the spinal cord. 2ndly. To laceration or division of its substance. 3dly. To pressure made on it either by displacement of bone or extravasated blood. Afterwards, inflammation of the membrane of the cord may take place, and other organs may be secondarily affected, giving rise to another order of symptoms, which did not exist in the first instance.

"Taking a general view of the symptoms, we may observe, that they vary—1st. According to the part of the spinal cord on which the injury has been inflicted. 2ndly. According to the kind and degree of injury which the cord has sustained. 3dly. Accordingly, as from accidental circumstances, of which we cannot take cognizance, the life of the patient is prolonged for a shorter or longer period, or ultimately preserved."

The symptoms enumerated are:—

Paralysis of the voluntary muscles below the seat of the injury; this is the most obvious effect of a severe injury of the spinal cord. The paralysis may be either complete or partial. Concussion of the spine often produces complete paralysis; but more frequently the paralysis arising from it is partial. One limb may be paralytic and another not so; or in the same limb certain muscles may be thus affected, while others are still obedient to the will. In some cases the patient

has the power of using his limbs while in the horizontal posture, yet is unable to stand erect. Or the degree of paralysis may vary at different periods. It affects the lower more commonly than the upper limbs.

Paralysis after an injury of the spine, is always a dangerous symptom; but many persons thus affected recover nevertheless.

Muscular Spasms.—Three cases are referred to, in which spasmodic movements of the inferior limbs followed injuries of the spine; in two of these there was some degree of pressure on the spinal cord; and the author is the more inclined to believe that this was the cause of the spasmodic affection of the muscles, as he has not met with any case in which it was proved, by dissection, that this symptom existed in combination with disorganization of the cord, and independently of pressure.

Affections of the Nerves of Sensation.—If the spinal cord be lacerated, or subjected to any considerable degree of pressure, the sensibility of the parts below the seat of injury is totally destroyed. If the injury be in the situation of the sixth or seventh cervical vertebra, the destruction of sensibility is frequently partial in the upper extremities, while it is complete in the trunk and lower extremities; but if the injury correspond with the two vertebræ immediately above these, the patient during the short remaining period of his life, presents the extraordinary phenomena of a living head, with its sensibility and muscular powers unimpaired, attached to a trunk and extremities of the existence of which he is totally unconscious.

"In cases of concussion of the spinal cord, there are the same varieties with respect to the destruction of sensibility, as there are with respect to that of voluntary motion."

"Where recovery takes place, (from injuries of the spine,) the restoration of sensibility usually precedes that of the power of voluntary motion, so that the patient may be quite sensible of external impressions, while he is still incapable of employing his muscles for any useful purpose."

Affection of Respiration.—If the spinal cord be divided or lacerated above the origin of the phrenic nerves, that is, above the situation of the third cervical vertebra, immediate death is the consequence. The nervous influence is no longer transmitted either to the diaphragm or to the other muscles of respiration, and death is produced in the same manner as from strangulation. Pressure made on the superior portion of the spinal cord, in consequence of dislocation or fracture, is attended with a similar result. Dislocations of the first and second vertebræ do not, however, prove fatal in this manner in every instance; two cases are given where the patients, both children, died of the symptoms of hydrocephalus.

"When the spinal cord is seriously injured in the lower part of the neck, (that is below the origin of the phrenic nerves,) or in the upper part of the back, there is nothing to interfere with the due action of the diaphragm, while the intercostal muscles, as well as the muscles of expiration, are rendered paralytic. The patient, therefore, breathes by the diaphragm only."

The patient in such cases is incapable of expectorating the mucus which collects in the trachea; if he coughs, the cough is peculiar, being effected by a forcible inspiration, followed by a sudden relaxation of the diaphragm; and if he be placed in the sitting posture, so that the pressure of the abdominal viscera is removed from the diaphragm, he breathes with much greater difficulty than when he is lying down. All these are to be regarded as very formidable symptoms. Recoveries under such circumstances are very rare.

"Injuries of the spinal cord in the lower part of the neck are not, however, necessarily followed by these results. The pressure on the spinal cord may be so small, or the disorganization of it from concussion may be so trifling, that the muscles of respiration are not, at any period, affected by it; or they may not be so in the first instance, and yet become affected afterwards." "In proportion as the

injury affects the spinal cord lower down in the back, so the respiratory function is in a less degree impaired."

Priapism is a very common symptom of injury of the spinal cord, and Mr. B. states it as a remarkable circumstance, that he has never known it to occur, excepting in combination with paralysis. It is met with in cases of simple concussion of the spinal cord, as well as from pressure; and seems to be connected with injuries of the upper, rather than with those of the lower portion of the cord. This for the most part is an early symptom, and seldom continues after the first fortnight.

Affections of the Urinary Organs.—Retention of urine is a symptom of those cases in which injury of the spine has produced paralysis of the lower part of the body. In the great majority of cases the patient is totally unconscious of the retention, but occasionally he suffers as he would from an ordinary retention of urine, but in a less degree. Retention of urine is usually an early symptom, and in fatal cases continues to the last. In cases where the catheter is not employed the urine flows involuntarily; in other cases there is a constant dribbling of urine, although the bladder is in a contracted state, so that on the introduction of the catheter no urine flows.

"The first effect of a severe injury of the spinal cord is not unfrequently to occasion a marked diminution in the quantity of the urine secreted. This is most observable where the injury is in the lower part of the neck, and where in consequence the function of respiration is very much impaired. The same thing may, however, occur when the injury is in the lower part of the spine. In some cases the urine which is first secreted after the occurrence of the accident, although of an acid quality and free from mucus, has a peculiarly offensive and disgusting odour. In other cases it is highly acid, having an opaque yellow appearance, and it deposits a yellow amorphous sediment. In one case this colouring matter was in such abundance, that it was found after death to have imparted a yellow tint to the mucous membrane of the bladder, which at the same time bore no marks of inflammation, even exhibiting less appearance of vascularity than under ordinary circumstances. But the most common change produced in the urine by an injury of the spinal cord is the following. It is voided of an animaliacal odour, and turbid; when allowed to cool and remain at rest, it deposits a large quantity of adhesive mucus; and when tested with reddened litmus or turmeric paper, it is found to be highly alkaline. After some time a quantity of white matter (phosphate of lime) may be detected in the mucus, and it is tinged with blood. At a still later period a considerable quantity of coagulable blood is blended with the mucus and urine. These appearances very commonly show themselves as early as the second or third day after the occurrence of the accident; sometimes not before the end of a week, or even eight or nine days. Mr. B. has not observed that the injury of one part of the spine is more liable to produce them than another. There is a great variety as to the period of their duration."

Affections of the Digestive Organs.—Whatever be the seat of the injury of the spinal cord, the bowels are torpid and the abdomen becomes tympanitic. In many cases there is incontinence of the fæces which have already reached the rectum. Frequently when the injury is in the cervical portion of the cord there is a disposition to vomit. In more protracted cases the alvine evacuations are black and semi-fluid, somewhat resembling tar or treacle in their appearance, and of a peculiar and offensive odour.

Alteration of the vital temperature.—In several cases of injury of the spinal cord at its upper part there was a remarkable evolution of animal heat.

Gangrene, and the formation of sloughs from the slightest pressure, are considered by Mr. B. as direct consequences of the injury of the cord, since they occur equally whether the action of the heart be strong or feeble, and are limited to those parts which are below the seat of injury.

Affection of the sensorium was seldom observed, except where the injury was in the cervical portion of the cord. In a case of fracture of the fifth and sixth

cervical vertebræ, with displacement of bone and laceration, the functions of the sensorium were in no degree disturbed. Another patient, in whom the same portion of the cord was bruised and lacerated, became comatose soon after the accident. A third patient, with fracture of the fourth and fifth cervical vertebræ, and softening of the spinal cord, was at first perfectly conscious and sensible. In less than twenty-four hours he fell into a state of almost complete stupor; then became delirious, and continued so until he died, thirty-six hours after the accident. A fourth patient, with a small extravasation of blood in the centre of the spinal cord, opposite the fifth and sixth cervical vertebræ, died in less than forty-eight hours, being sensible and conscious nearly to the last; the pupils of his eyes were contracted.

In addition to the above symptoms there takes place, as an immediate effect of injuries of the spine, a diminished force of the heart's action, with a state of general depression and collapse. Occasionally a rigor occurs soon after the accident. When the injury is in the lower part of the neck, the patient frequently dies before complete reaction is established. In most cases, however, after twenty-four hours the pulse rises to 96 or 100, but is still feeble and contracted. The tongue is usually dry and parched, and covered with a brown fur, soon changing to a black crust.

When the injury is in the lower part of the neck, or in the dorsal or lumbar portion of the cord, and the patient survives three or four days, or ultimately recovers, the pulse usually remains for a long time more frequent than natural, but feeble and contracted; the tongue at the same time becoming more clean and moist than it was in the first instance. Blood drawn under these circumstances presents a coagulum of large size and loose texture—sometimes having a slight butty coat in the first instance, but none afterwards. These observations apply, according to Mr. B.'s experience, to all those cases in which the effect of the injury is to induce that softening of the spinal cord which may or may not terminate in its complete dissolution, without exciting inflammation of the membranes.

"Inflammation of the membranes of the spinal cord is undoubtedly a much more rare consequence of injuries of the spine, than inflammation of the membranes of the brain is of injuries of the head. In the cases of this kind which have fallen under Mr. B.'s observation, the process of softening and dissolution of the spinal cord had gone on simultaneously with the inflammation of the membranes, and there were during life all those symptoms by which the existence of the former of these affections is indicated in other instances. But superadded to these, there were profuse perspirations, and severe and repeated rigors, marking the occurrence of suppuration: there were also spasmodic twitches of the voluntary muscles, but not until it might reasonably be supposed that pus was collected in sufficient quantity to make pressure on the spinal cord."

"In reviewing the various consequences of injuries of the spinal cord, we find nothing more remarkable than the following circumstance: that whether the cord be lacerated or compressed, or has undergone that kind of disorganization which is induced by a severe concussion, there is no material difference in the symptoms which arise or in the results to which they lead. The great majority of symptoms also are the same, whatever part of the spinal cord has suffered from the injury.

"There is only one order of symptoms with respect to which a great difference exists, accordingly as the seat of the injury is in one or another part of the spinal cord—those, namely, which depend upon the state of the respiratory function."

We cannot follow the writer in his brief summary of the treatment of the injuries of the spine. He seems to admit that cases of dislocation and fracture, with displacement of even the cervical vertebræ, may possibly occur in which it would be proper to attempt reduction. It is evident, he remarks, that if the attempt be made at all, it must be with the greatest caution. Boyer describes a case in which a child died under it. But there can be no doubt, that when

the injury is in the lower part of the spine, the attempt to effect reduction may be not only made with impunity, but that it may be successful.

In regard to the proposition to apply the trephine in cases of fracture of the spine attended with depression of the bony ring of the vertebrae, with a view to the removal of the depression, Mr. B., after examining the question in all its bearings, remarks, that if his views be correct, "it is evident that the cases in which there are any reasonable grounds for the performance of the operation, must be of very rare occurrence, and that even under the most auspicious circumstances it must be doubtful whether it may not be productive of harm rather than of good to the patient."

10. *Observations on some Tumours of the Mouth and Jaws.* By ROBERT LISTON, Esq.—Our limits will not permit us to attempt an analysis of this paper. The interesting introductory remarks of the author would have to be given nearly entire to do him justice, or to convey much instruction to the reader, while a condensed account of the four cases, the histories of which are comprised in the article before us, would convey but little useful instruction to the surgeon. In all the cases related the tumours were successfully removed by the knife, and the patients recovered with comparatively little deformity.

11. *Of inflammation, chronic disease, and perforative ulceration of the Cæcum, and of the appendix vermiformis cæci, with symptomatic peritonitis and fecal abscess.* By JOHN BURNE, M. D.—The affections treated of in this paper are said to be of frequent occurrence, to be always dangerous, often fatal, and characterized by a train of symptoms so peculiar and marked as to render the recognition of them very easy. The inflammation of the cæcum in all the cases observed by Dr. B. has been symptomatic of some mechanical exciting cause, as the lodgment of undigested food, of fruit stones, or of concretions, which the structure of the cæcum and appendix favours.

"The first symptom is a sense of uneasiness, which soon amounts to an aching pain, deep seated in the right ilio-inguinal region, arising unexpectedly while the person was in health, and not preceded by rigor or exposure. This pain increases progressively for twelve or twenty-four hours, retains its character, is fixed and constant, never even remitting. Then supervene, gradually, tenderness, fulness, and tension of the whole ilio-inguinal region; the bowels are constipated and do not reply to medicine, and the patient grows sick and vomits. Some febrile movement now begins to manifest itself, the tongue becomes white and furred; the urine scanty; the appetite is gone; the pulse is frequent, tight and sharp, with increased volume, but the stroke, though sharp, is not strong, nor is its impression on the finger decided—it is a pulse of irritation and inflammation combined; the patient lies on the back quite still, slightly inclined to the side affected, and the case presents a serious aspect.

"This state of things will persist for several days, the pain remaining of a very severe aching character. The fulness and tension of the part will increase and extend to the other regions of the abdomen which hitherto had been soft and not tender; and a sign will now be present in an eminent degree characteristic of this inflammation, it is an *exquisite tenderness* of the abdominal parietes covering the cæcum, a tenderness far exceeding that of an enteritis, even of a peritonitis; the patient will scarcely allow a finger to be laid upon the part. The constipation continues, but the vomiting does not become so frequent and distressing as in enteritis, nor does the face betray so soon the anxious aspect. Taking the case altogether, it is not such an imminent affair of life and death as an enteritis, though in the sequel it may prove equally fatal.

"A favourable termination cannot be calculated upon till alvine evacuations have been procured, followed by a subsidence of the tenderness, tension, pain and vomiting, all which can seldom be accomplished in less than seven or eight days."

It may occur that all the symptoms persist, and the patient's strength declines seriously about the eighth day, especially if much blood has been abstracted.

when he seems to sink rather from exhaustion of the powers of life than from the effect of the inflammation, and so he dies.

"If life is prolonged, there may be discovered, about the tenth day, a circumscribed emphysematous tumour, presenting in front in the right ilio-inguinal region, or posteriorly, in the corresponding ilio-lumbar region, which will prove to be a faecal abscess making its way to the surface of the body. Ulcerative perforation of the anterior or posterior part of the cæcum will have taken place; if, of the anterior part, adhesion will have formed around the perforations, and thus the faecal abscess will arrive at the circumference of the body without involving the peritoneum in a general inflammation; if of the posterior part, which has no peritoneal tunic, then the peritoneum will escape altogether, and the abscess will tend upwards and backwards to the least resisting part of the lumbar parietes, which is the outer edge of the lumborum muscle. This abscess may discharge itself and the patient do well; or nature may be unequal to the task and the patient sink exhausted."

In regard to the treatment of the affection now described, cautious and moderate blood-letting is directed; the quantity of blood taken, we are told, should not be large at any time, nor practised at so short intervals as in enteritis. Leeches to the seat of the disease are strongly recommended, but not in too large numbers nor too frequently. Eight or ten are as many as should be applied at once, and they may be repeated daily at first, then every alternate day with advantage. After the leeches, a warm oatmeal poultice, not too thick nor too heavy, should be applied. The leech bites should not be allowed to bleed more than one hour. The colon should be evacuated by a domestic enema, and aperients given with a view to dislodge the offending matter, as a solution of sulph. soda in half an ounce infus. senna, with four drops tinc. opii to appease the stomach. Should this not be retained, infus. senna with tartarized soda, carbonate of soda, and tartaric acid, in a state of effervescence, will be preferable.

Should this prove ineffectual, it may be proper, lastly, to resort to the compound ext. of colocynth, calomel and opium, in doses of six, two and one grain respectively every six hours. It is seldom necessary, we are told, to bleed from the arm a second time, the application of leeches being more likely to relieve the local affection with less sacrifice of strength.

"A fomentation, dexterously and lightly applied, and persevered in, will prove a most valuable auxiliary; the hot bath should not be proposed, any motion of the body being too painful to admit of its use. About the fifth or sixth day the bowels may begin to act, and lumpy pieces of undigested matter may or may not be recognised in the injections, after which the symptoms will gradually subside and the patient recover."

When a tumour presents itself in the ilio-inguinal or lumbar region, it should be encouraged to the surface by poultices; and the moment it becomes emphysematous a free incision should be made, which will allow the escape of a fetid gas and fluid, and the cellular tissue will be found to be gangrenous. The strength of the patient is now to be supported by broths, arrow root, weak brandy and water, ammonia, and as soon as possible by the decoction of bark, which Dr. B. prefers here to the quinine; an opiate in a full dose should be given at night to procure rest.

The cæcum is likewise the seat not unfrequently of "a sub-acute chronic inflammation or pathological congestion," producing thickening of its tissues and contraction of its natural capacity, and thus rendering the action of the bowels irregular and difficult, and eventually causing a complete and fatal obstruction. This condition of the cæcum may exist for months or even years. The health of the patient declines, the body wastes away, and the patient dies worn down by sickness, inanition, and the dreadful spasmodic pains arising from the violent efforts of the bowels to overcome the obstruction. It is not uncommon for attacks of peritonitis to supervene, excited by the distension. Several attacks

may even succeed each other at longer or shorter intervals, marked by the characteristic signs.

The vermiform appendix of the cæcum is liable to be the seat of disease. Most frequently, according to the author, the appendix, instead of descending into the pelvis, is situated on the outer edge of the psoas magnus on the fascia iliaca, simply curled up beneath the cæcum and concealed by it.

If it should happen to descend into the pelvis, in the event of a perforative ulceration, and consequent peritonitis or faecal abscess, the pelvic viscera will be implicated; if the appendix, however, be situated on the iliac fascia beneath the cæcum, then the belly of the iliacus intervenes and the neighbouring adipose cellular tissue will be involved, and the course of the abscess determined accordingly. Small portions of the residuary alimentary matter, or indigestible substances, as seeds, cherry stones, intestinal concretions, &c., are liable to pass into the cavity of the vermiform appendix. These bodies, when small, may not produce for a time any bad consequences. Even small bodies may, however, if they remain long in the cavity, induce ulceration of the mucous membrane—a lesion often found, without causing more inconvenience than results from a superficial ulceration of any other part of the alimentary canal. But if a substance larger than the canal of the appendix happens to be forced into it and become impacted, then not only does it produce ulceration of the mucous membrane, but of all the other tunics, until it reaches the peritoneum, which being thus deprived of its means of nutrition, dies, sloughs, then bursts, and a perforation is effected, and peritonitis ensues; which may be general, or it may be limited to the vicinity of the perforation, and give rise to an abscess. Though the latter is always a dangerous occurrence, it may nevertheless come forward, burst, discharge itself, and the patient recover; or it may remain circumscribed and stationary, forming a deep seated painful tumour in the vicinity of the cæcum, producing obstinate costiveness, a sympathetic disturbance of the stomach and of the whole system, and thus gradually wear down and exhaust the unfortunate patient. In one case the tumour burst in the bowel, and the patient recovered perfectly.

12. *On black expectoration and the deposition of black matter in the Lungs, particularly as occurring in coal miners, &c.* By WILLIAM THOMSON, M. D., of Edinburgh.—Dr. Thompson remarks, that the presence within the body of different kinds of morbid matter of a black colour, has been accounted for, by supposing that they are in some cases the products of secretion; in others, extravasated blood; and in others again, foreign substances introduced into the body from without. The frequent occurrence of black discoloration of the sputa during life, and of a black matter in the lungs and bronchial glands after death, more frequently than in other parts of the body of which such matter does not form a constituent, has led to the suspicion, that in many instances these appearances must depend on the introduction of foreign substances into the respiratory organs by inhalation, and are not referable to either secretion or extravasation.

In the paper before us Mr. T. has endeavoured to ascertain in which of the various ways above mentioned the black sputa and deposition of black matter in the pulmonary organs take place; to determine how many varieties of black discoloration of the sputa and lungs ought to be recognised, whether attributable to external or internal origin; and how these may be distinguished from one another during life, or on examination after death.

Mr. T. is particularly desirous to call the attention of the profession to the evidence in favour of the extraneous origin of the black matter by which the sputa are liable to be discoloured and the lungs to be infiltrated, which has been supposed to be derived from the occurrence of these affections in persons who, from their occupations, are particularly exposed to the inhalation of carbonaceous powders or gases, such as coal miners and moulders in iron works. The paper

is divided into three parts. In the first are brought together all the individual cases of these affections as occurring in the class of persons first alluded to, which have come to the knowledge of the author and of his father, together with several communications relative to the same subject from gentlemen who have had an opportunity of witnessing these affections on an extensive scale. In the second part are briefly recapitulated the observations and opinions respecting black sputa and black infiltration of the pulmonary organs to be found in the writings of authors, previously to the time at which these appearances began to attract attention. The first part only is now presented. This comprises a large mass of highly interesting facts in relation to the subject the author has undertaken to investigate. We regret that it is impossible to present a satisfactory analysis of these within the limits to which we are necessarily restricted.

13. *Sequel of the history of a case in which the external iliac artery was tied, with an account of the condition of the blood-vessels in the limb after death.* By G. NORMAN, Esq.—The case, the sequel of which is now given, is related in the 10th volume of the Transactions, page 95. The patient continued free from any aneurismal disease after the operation. During the last two years of his life he had several slight threatenings of apoplexy, and was habitually subject to swelling of the feet and legs. He died February 2nd, 1834, of Asiatic cholera. The external iliac vein, on dissection, was found to be pervious. The external iliac artery was obliterated from the bifurcation of the common iliac to a point corresponding nearly to the lower edge of Poupart's ligament, and about one-eighth of an inch above the origins of the epigastric and circumflexa ilii arteries; here it became pervious, and of equal size with the vessel of the other limb.

"The cord occupying the place of the obliterated vessel was of considerable size; the arterial coats perfectly distinct; and a probe introduced into its centre readily separated the adherent surfaces of the internal coat, until it reached a point about an inch above Poupart's ligament, where all traces of the natural textures were lost and replaced by a dense fibrous bundle. About four inches below the crural arch, at the outer and posterior part of the femoral artery, was found a mass as large as a small walnut, composed of dense fibro-cellular substance; it involved the first part of the common origin of the profunda and external circumflex arteries, which, though obliterated, could be distinctly traced to the femoral. A portion of the profunda of about two inches was thus circumstanced; no injection having passed into it; and the remaining part of the vessel, which was of small size, being filled by the communication of its branches with other sources of supply.

"The collateral circulation had obviously been mainly carried on by the ramifications of the internal iliac artery, which was nearly as large as the femoral. The manner in which it was effected may be described as follows: 1. The ilio-lumbar artery, of very large size, gave several branches to the lumbar plexus of nerves, descending in the substance of the anterior crural nerve, as several elongated tortuous vessels communicating at the upper and outer part of the thigh with branches ordinarily derived from the external circumflex, and reaching to the fibro-cellular mass already noticed. Other ramifications of the ilio-lumbar anastomosed with those of the circumflexa ilii; and also by that medium, on the one hand, with the inferior lumbar arteries; on the other, with the external circumflex of the thigh. 2. The obturator artery was proportionately much the largest division of the internal iliac, and with its branches very tortuous. Immediately before its passage through the obturator foramen, it gave off a large branch communicating with the epigastric at a very short distance from its origin, and forming apparently the chief source of supply to the epigastric, which was itself comparatively small. Directly after its emergence at the upper and inner part of the thigh many of its external ramifications, much enlarged and very tortuous, anastomosed freely with corresponding branches of the internal circumflex, also of large size. 3. The gluteal artery was of average size; some of its anterior branches emerging on the dorsum of the ilium from among the gluteal muscles, united with ascending branches derived from the external circumflex of the thigh.

4. The ischiatic artery was enlarged, and communicated tolerably freely with the posterior divisions of the profunda. 5. The internal pudendal artery was also of unusual size, and numerous tortuous twigs, collectively of considerable capacity, derived from its external branches, established a communication between the internal iliac and various branches chiefly of the internal circumflex at the upper and inner part of the thigh."

14. *Researches on some points of the Pathology of Pulmonary Tubercles.* By P. N. KINGSTON, M. D.—The design of the present paper is to show—1st. That the common pulmonary tubercle is a vascular texture. 2ndly. That it sometimes originates in an alteration of the air-cells and their secretions; and 3dly. That now and then it is entirely healed, when it has even extended over a very large portion of the lungs. The facts and arguments adduced by the writer in reference to these several points are interesting and ingenious. To present, however, a fair exposition of the author's views and the data upon which they are based, would be impossible, in a brief notice of the paper, while our limits will not permit us to give to our readers an extended analysis of it. It well deserves, however, an attentive perusal, as every attempt to throw light upon the origin and nature of pulmonary tubercles must be considered of importance, by leading to an improved and more successful treatment or a more certain prophylaxis of what is now one of the least manageable forms of consumption of the lungs.

15. *Observations on some of the Forms of Atrophy of Bone.* By THOMAS BLIZARD CURLING.—Of this paper we can present only a very brief sketch. Atrophy, it is remarked, may occur in the bones generally, or be limited to certain bones, or to particular parts of bones, and it may be expressed by a deficiency of the earthy particles alone, or of all the constituents. Local atrophy is generally found to be induced by pressure or friction, as in bones obstructing the growth of cystic, aneurismal, and other tumours. As, in these cases, vascular structures waste faster than those less highly organized, it is most probable that the process is one of absorption, those parts being more rapidly removed which are best supplied with the active agents that carry off their molecules. In atrophy from pressure, the animal and earthy constituents are removed equally and together.

Local atrophy is sometimes the result of an injury, being produced by an action different from that commonly known by the term caries, following contused wounds and other injuries. Instead, however, of being limited to a part of a bone, or to the seat of injury, atrophy may be occasioned in the entire bone from this cause, so that, without any evident alteration in external configuration, by a change affecting both hard and soft particles, the bone may be rendered smaller and of diminished weight. This, in order to denote the direction of the wasting, and to distinguish it from another form, may be, the author conceives, correctly termed *concentric atrophy* of bone.

The bones, as well as the soft structure, waste away whenever their activity is diminished or their functions suspended. This is seen in the bones of stumps after amputation, and in the bones of ankylosed limbs. Bones likewise waste in common with other tissues, when deprived of nervous influence. Atrophy is observed to be an effect of a diminution in the normal supply of blood; but the author is not aware that any example has hitherto been pointed out of bone wasting from this cause. It nevertheless occurred to him, that in fracture of the long bones, one part must have the supply of blood it derives from the nutrient artery entirely cut off, when, although both the periosteal and nutrient vessels of the bone communicate freely with each other, yet the minute canals, through which the former pass, being of a dense, unyielding nature, these vessels must be prevented from undergoing that rapid increase of size, which, in the soft structures, constitutes so efficient a provision for a due circulation. He accordingly examined sections of fractured cylindrical bones, in

order to ascertain if the ends which had been deprived of their normal supply of blood from the nutrient artery, underwent a corresponding degree of atrophy; and he found in nearly all the specimens first examined such was the case. Thus in femurs fractured below the entrance of the nutrient artery, the interior cavity of the inferior extremity was enlarged, the cancelli expanded, and the walls thinned, a form of atrophy which he proposes to distinguish by the term *eccentric*. A like alteration was observed in fractured tibiæ, whilst in a humerus, broken near the middle and somewhat above the entrance of the nutrient artery, the upper portion was the seat of this change.

"This wasting of the osseous tissue in that part of a fractured bone, deprived of its usual supply of blood from the medullary artery, is not *constantly* met with; and if the explanation, which attributes it to defective nutrition, be found correct, we should expect that atrophy would not be observed under the following circumstances:—

"1. In bones recently fractured: because the process by which atrophy is accomplished must necessarily be gradual, hence some time must elapse before it will be perceptible.

"2. In bones long united: because a collateral, if not the regular circulation is subsequently, though not immediately established, by which means the previously existing lesion would have been repaired. In old persons, and in those of weak powers, the circulation may never be completely reinstated, in which case the atrophy will be permanent.

"3. In bones fractured during the period of growth: because the circulation in bone, as in other structures, being at this time more active, the vessels being larger and more numerous, and the canals through which they enter the osseous tissue less dense and but imperfectly formed, the circulation is re-established before any visible degree of atrophy can ensue."

The absence of ossification, consequent upon a diminished supply of blood, is regarded by Sir A. Cooper as the principal reason for the want of union after a fracture of the neck of the femur within the capsular ligament.

There is one species of *eccentric* atrophy of bone of such rare occurrence that the records of our profession scarcely furnish twenty well marked examples; this constitutes the disease commonly known by the name of *mollities ossium*. A striking case of this affection is given by the author, followed by some interesting observations in reference to softening of the bones generally, of which, we regret, it is not in our power to lay before our readers even a brief notice.

16. *A Brief Account of the subsequent Medical History of Mary Wren, whose case is detailed in the thirteenth volume of the Society's Transactions.* By Mr. BIRCH. —It appears that about nine months after Mr. Birch's attendance this female became pregnant, and miscarried at the fourth month; that in 1831 she again became pregnant, went her full time, and was delivered of a living child, after a good and natural labour; and that she again, and for the third time since the accident of 1827, conceived in the month of October, 1834; labour occurring on Sunday, the 21st of June, 1835, and death on the following Friday.

On the night of Saturday, a little before 12 o'clock, Mr. Skinner states, "that he found the uterus acting with great power and frequency, which it continued to do for three hours, and then its contractions suddenly ceased, the patient complaining of a most excruciating pain in the abdomen." At this time Mr. Thorn saw her. Upon making an examination he found the funis presenting, together with a hand; the os uteri fully dilated, and the pulsation in the funis ceased. He immediately introduced his hand, and brought the feet into the vagina, and very easily made the evolution of the child. The delivery was effected with little or no difficulty, notwithstanding the fœtus was rather beyond the ordinary size. No exertion was made in bringing the head through the superior aperture of the pelvis; there was no hæmorrhage, no vomiting; pulse firm and regular; nor did the countenance indicate that laceration of the uterus had again taken place. The body was examined, June 27th. The morbid appearances were as follows:—

"The whole peritoneal membrane highly inflamed. The abdominal viscera adhering to one another by coagulable lymph. The omentum of a deep red colour and highly vascular, and closely adherent to the intestines and to the fundus of the uterus. The serous covering of the uterus exhibiting signs of severe inflammation, lymph being thrown out in a thick layer over the fundus and part of the body. The broad ligament, the ovaria, and the fallopian tubes highly inflamed, and partially imbedded in lymph and pus. The whole of the pelvic viscera being removed, a lacerated opening was found extending across the cervix uteri in its anterior part, and dipping into the sides of the uterus also; the edges of the wound extremely ragged, without granulation, and no attempt at union apparent. Upon the most careful inspection there was not discovered any cicatrix of the former rupture, and there was reason to believe, from the evident *cause* of the accident on *both* occasions, it must have taken place precisely in the same spot as the present laceration. A very prominent linea ilio-pectinea, together with a briin below the average size, would appear to have been the *immediate* cause. The dimensions were as follows:—

"Antero-posterior diameter, 3 inches 2 lines. Diagonal diameter, 4 inches 3 lines. Symphysis pubis, very prominent within; and the linea ilio-pectinea, raised full two lines, and exceedingly sharp at their edges."

17. *Case of Removal of a portion of Lung which Protruded through a Wound, etc.* By W. FORDE, Esq.—A Fingo of athletic make and good health, aged about 35 years, in an engagement with the Caffers, was transfixed by an azigai through the right side; the weapon entered opposite to the eleventh rib, three inches from the spine, and the same distance from the crest of the ilium; and made its exit in the right hypochondrium, midway between the umbilicus and the cartilage of the ninth rib, the openings being three inches distant from each other; and the whole course of the wound, supposing it to be in a direct line, six inches in length.

The man immediately withdrew the shaft of the weapon through the anterior opening, and with it dragged forth a considerable portion of lung. He was soon afterwards picked up by some wagons which happened to pass, and a greased rag being applied to the part, he was conveyed to the camp early on the following day. His respiration was then slightly oppressed and impeded, he inclined to the right side, but did not complain of pain. The piece of lung protruded was about five inches in length, and of considerable thickness, and the opening through which it had escaped, being merely an incision three-fourths of an inch in length, reduction of the part was impracticable without considerable dilatation being practised, a measure, which, from the situation and nature of the wound, was deemed extremely hazardous, if not impossible. But the attempt to return the lung into its natural situation was inadvisable, its texture and serous covering having been much lacerated by the man's own endeavours to tear it away; its removal was therefore determined on. A ligature was applied tightly around it close to the integuments, and the edges of the wound were brought together by means of a strip of adhesive plaster, leaving the protruded lung undivided, until the process of adhesion should take place and prevent the motions of the thorax and expansions of the lungs drawing the contracted part into the pleural cavity, together with the ligature, or the slipping off of the latter, receding of the lung and hemorrhage into the thorax.

On the third day adhesion being perfect, and the separation nearly effected by the ligature, the piece of lung was cut off with seissors, and both openings dressed with adhesive strips. From this moment there was not one untoward symptom, and the only medical treatment required consisted in giving a dose of Epsom salts. For a few days there was a healthy discharge from the opening in the back, which gradually ceased and the wound granulated; at the expiration of a fortnight the whole had healed, the man had quite recovered, and

he can now run, throw his azigai, and perform any other active feat, as well as any of his most agile companions.

"I confess," remarks Mr. Forde, "I am at a loss to account for the protrusion of a piece of lung, (and lung it most decidedly was, having been carefully examined by Assistant Surgeon Bickersteth and myself, and its texture and appearance could not easily be mistaken,) in the centre of the right hypochondriac region, as connected with the apparent course of the wound, unless it be assumed that at the moment it was inflicted, the man had been in some extraordinary crouching position. Of necessity the diaphragm, with its pleural and peritoneal coverings, must have been perforated, and yet the man recovered without a single symptom of pleuritic, peritoneal, or pulmonic inflammation."

D. F. C.

ART. XV.—*Essay on the Mineral Waters of Carlsbad, for Physicians and Patients.* By Chevalier JOHN DE CARRO, M. D., of the Faculties of Edinburgh, Vienna, and Prague, and Physician at Carlsbad during the season. *With Observations on the Microscopic Animalcules about the Hot Springs of Carlsbad.* By Mr. A. J. C. CORDA, of Prague, and a Flora of Carlsbad, by Professor C. B. PRESL, of Prague. 12 mo. pp. 136. Prague: 1835.

Wenzel Payer, of Ellbogen, wrote the first medical treatise, in 1521, upon the waters of the ancient and far famed thermal springs of Carlsbad, but their virtues had been sung in Latin hexameters five and twenty years previously by Bohuslas de Lobkowitz, a Bohemian nobleman. These springs have been the constant resort, since the fourteenth century, of crowds of people labouring under almost every form of disease, or belonging to that class in society, happily more numerous in Europe, than in this country, who spend the better part of their lives in search of the means for restoring that health which, by a luxurious and intemperate course of living, they are hourly rendering more and more infirm.

Formerly the mineral waters of Carlsbad had a reputation for remedial virtues, in numerous complaints and infirmities, which later experience has shown to be greatly overrated—but even at the present day, when their active properties, as well as their effects upon the living system, both in health and disease, are well understood, they have lost nothing of their former fame—thousands of patients still resort to them annually, from almost every part of Europe: thus in 1834, the number of permanent visitors amounted to 6165 individuals.

Carlsbad is situated sixty German miles from Vienna, and sixteen from Prague, in a deep and narrow valley, between granitic rocks, on both sides of the Teple, which empties itself into a larger river, the Egra, very near the town. The houses are all built on the declivity of the hills, and on the banks of the Teple. These hills beautifully wooded, offer innumerable and well kept walks, a great variety of prospects, and an interesting field to lovers of geology and botany. According to the late observations of David, Royal Astronomer at Prague, Carlsbad lays in 50° 13' 38" of Lat., 30° 32' 47" Long., and 182 fathoms above the level of the sea near Hamburg.

All the hot springs of Carlsbad rise from the same natural reservoir, by different orifices, each having a different name and temperature. Their number has often varied, new ones occasionally appearing, while others disappear and are again restored. The boiler which supplies them all, is formed from the mineral sediments of the water itself, and has a depth, thickness, extent and ramifications, which no human eye can scrutinize, while the enormous mass of hot and dense vapour, escaping from every accidental or artificial opening, will probably baffle all attempts to ascertain the dimensions of this wonderful laboratory. Such trials were made in 1713 and 1727, after a rupture of the

boiler had occurred. The various boring and probing instruments penetrated through the calcareous crust, from one cavity to another, until at length they arrived at an immense reservoir, the boundaries of which could not be reached by poles joined together to the length of thirty fathoms. That a great part of the town stands upon these cavities is sufficiently demonstrated, whenever the foundation of a new house is laid: copious streams of carbonic acid gas are likewise seen constantly bubbling up from the river, near the wells.

The Sprudel spring to which superior powers are attributed, is situated on the right bank of the river, in the centre of the town its temperature is 168° Fahrenheit. It has various orifices, two of which only are adapted to public use. The vapour of one of these supplies the steam baths. Broad square stones and long boards are placed over the thermal chaldron to protect it against the large masses of ice and floating trees, which, in their rapid course, when a thaw or inundation takes place, might break through the crust, and disturb the equilibrium indispensable to the regular spouting of the water. In order to prevent such ruptures, the repair of which is always slow, troublesome and expensive, the incrustation about the orifices of the spring is removed four times a year by a boring apparatus.

The springs of the Sprudel fountain are thus explained: The upper parts of the reservoir become filled with carbonic acid gas, which escapes the more freely from the hot fluid mass below, as the pressure upon the latter diminishes with the evaporating of the gas. In this free state, the gas accumulates in the upper part of the cavity, and finally depresses the surface of the water, which rushes out of the same orifice—the two in the form of vapour escape together, giving in a minute, without intermission, eighteen or twenty ebullitions, from four to eight feet high. A hollow, unequal and subterraneous murmur accompanies the emission of so much water, which, divided into myriads of globules, falls back into the same vessel, (now in the form of a large artichoke,) from whence it springs, and is led by lateral pipes to the baths, to the evaporating apparatus for the manufacture of sulphat of sodæ, and to the adjoining river. The height of the springs can be increased more or less, according to the breadth and length of the square wooden pipe, through which the water ascends; it nevertheless remains a springing fountain, without the addition of a pipe. The Mühlbrunn with a temperature of 135° Fahrenheit; the Neubrunn, 147° Fahrenheit; and the Theresienbrunn 132° Fahrenheit, on the left side of the Teple, communicate together, and like the Sprudel fountain, are decorated with elegant buildings, colonnades and gardens. The Schlossbrunn 122° Fahrenheit, is much less frequented, on account of its elevated situation, while the cavernous Bernardsbrunn is scarcely accessible to drinkers; its abundant water, nearly as hot as the Sprudel, is led into a reservoir, necessary for cooling the Mühlbrunn baths. Some ophthalmic patients use its vapour at random, without medical advice. The Spitalbrunn supplies the baths of the St. Bernard's Hospital, and is frequented only by the inmates of that institution.

M. Berzelius found that every 1000 parts by weight of the Sprudel water, contained—

| | |
|------------------------------------|-----------------|
| Sulphate of Soda | 2,58713 |
| Carbonate of Soda | 1,26237 |
| Muriate of Soda | 1,03852 |
| Carbonate of Lime | 0,30860 |
| Fluate of Lime | 0,00320 |
| Phosphate of Lime | 0,00022 |
| Carbonate of Strontian | 0,00096 |
| Carbonate of Magnesia | 0,17831 |
| Sub-phosphate of Alumine | 0,00032 |
| Carbonate of Iron | 0,00362 |
| Carbonate of Manganese | 0,00084 |
| Silicia | 0,07515=5,45927 |

The Mühlbrunn, Neubrunn, and Theresienbrunn were found to contain, not only the same ingredients, but in precisely the same proportions.

Becher ascertained that the Carlsbad water possessed as much carbonic acid as its bicarbonates could contain, with the exception of that of the Sprudel fountain, in which there was rather more. The Theresienbrunn contains likewise one per cent. of azote.

It appears that for a long time the Carlsbad waters were employed almost exclusively, as a remedial agent, in the form of baths—on the suggestion, however, of Wenzel Payer, in 1521. they became also to be used internally, while, since 1827, exposure to the steam arising from the springs, was conjoined to bathing in the water and its internal use. The junction of these three curative means, the author remarks, has manifestly increased the fame of these springs. Although they are all often prescribed in the same case, drinking the water is still considered as the most important. A great many patients are cured without either water or vapour bathing, but few by bathing without drinking.

Whichever of the springs patients are recommended to, they come regularly from six to eight o'clock in the morning. Some drink a few goblets in the evening. The interval prescribed between the draughts being fifteen minutes, scarcely more than nine or ten can be taken within the two hours. This quantity proves sufficient in most cases—many patients, however, using a much greater number, begin earlier. Formerly, we are informed, when the purgative effect of the waters was deemed the most important, physicians encouraged plentiful drinking, but since their alterative and slowly deobstruent action has been better understood, and it has been found that the alvine discharges are seldom proportioned to the quantity of water drunk, they have, in general, advised patients in the use of the water not to overpass that degree of saturation which borders on disgust.

The season usually begins at Carlsbad on the 1st of May, and terminates by the end of September. The action of the waters upon the cutaneous functions being promoted by warm weather, June, July, and August, are the months during which the greatest number of visitors attend.

The water of these springs occasions neither nausea nor vomiting; it has an exciting action on the stomach, bowels, kidneys, liver, and other abdominal organs, augmenting their secretions and excretions. It acts especially upon the blood-vessels, creates often an orgasmus and palpitations with determination to the head. It increases indirectly the activity of the lymphatic system, and only becomes a tonic after it has augmented the secretions and excretions. The disorders to which these waters are considered as best adapted, are those proceeding from "stagnation and obstructions of the blood-vessels, or of the organs copiously provided with them," giving rise to "weakness of the stomach, heart-burn, acidities, swelling, eructations, costiveness, which, complicated with derangements of the nervous system, obstruct the liver, the spleen, the mesentery, the epiploon, produce biliary concretions, jaundice in all its degrees, hypochondriasis with its visions, fluent and blind piles, head-ache, vertigo, and all sorts of arthritic, herpetic and urinary complaints."

The waters used as a bath, "assist powerfully the internal cure, in a variety of rheumatic, gouty and herpetic cases—and often facilitate the passage of biliary and urinary concretions; they are more efficacious, and less productive of congestions, when the secretory and excretory action of the water on the bowels and kidneys has already commenced."

The steam from the springs is applied either as a general or partial bath—if the patient takes only a half-bath, sitting in the box up to the pit of the stomach, he can bear a few degrees of heat more than in a whole bath. Few can support a whole steam bath above twenty minutes, but he can a half bath for a longer period. The head is never exposed to the vapour, in consequence of the carbonic acid gas, with which it is combined. "Some patients, labouring under *tic douloureux*, after having tried innumerable remedies, and even surgical

operations, have been, if not radically cured, at least essentially relieved," by the steam bath. It has also proved useful in some cases of deafness—"if such patients cannot support the stream of the vapour-douche in the inside of the ear, it must be directed to the neighbouring parts of the organ. In rheumatism, lumbago, sciatic, stiffness of the joints, contractions of muscles," the vapour affords a precious remedy whenever these cases are unattended with febrile symptoms. In herpetic eruptions, and "in the herpetic spots," they are useful, conjointly with the internal use of the waters, but far less than the sulphureous fumigations.

The patients who resort to Carlsbad are placed under an appropriate and regulated regimen and diet, which no doubt has a very powerful influence in augmenting the curative effects ascribed to the waters. Carlsbad, remarks our author, being nothing more than a most elegant hospital, is by no means a place of dissipation. The amusements are of a quiet and moderate kind; the necessary early hours for attending the wells in the morning prevent late ones at night; the strict prohibition of hazard games; the obligation of submitting to a sober diet, and of taking much bodily exercise, have introduced very regular habits into society, and more than one gastronome and hard drinker has begun at Carlsbad to understand the incalculable advantages of sobriety and temperance.

To the essay of Dr. De Carro is appended some very interesting observations upon the microscopic animalcules found about the hot-springs of Carlsbad. The wood and stones, as well as the boards and pipes in the immediate vicinity of the wells, are covered with a slimy, gelatinous green substance, of more or less thickness, and often lamellous. Carefully examined, this matter is found to be composed of myriads of elegantly and symmetrically formed beings, of an infinite variety of forms, most of them belonging to the animal kingdom; the forms, modes of life and propagation of which, cannot but excite the highest degree of astonishment. These animalcules, whose size is frequently only the fifteen millionth part of a Paris inch, and seldom more than the nine thousandth, are endowed with organs, simple indeed, if compared with those of a higher order of animals, but complicated proportionally to their own bodies. They move, give signs of feeling, of self-preservation and of propagation, and often even of the means of appropriating to themselves extraneous substances, foreign to their nature. M. Corda divides these animalcules, according to their organization, into two classes, subdivided into six families. The three first families have a brittle tegument; the three last a flexible one. A description is given of the external forms, organs of motion, nutrition, and propagation of these animalcules, which our limits will not permit us to copy; nor would it be very intelligible, unless accompanied by the drawings given in the work before us. Neither have we room for a notice of the Flora of Carlsbad, by Professor Presl, with which the volume closes.

The entire work is an extremely interesting one; and although we might with propriety regret that that portion of it which is strictly medical had not been presented in a more scientific form, and that the author had not entered more into details, when treating of the therapeutical application of mineral waters that have obtained so much celebrity in the cure of disease as to be imitated artificially at Brighton in England, we shall refrain from finding any fault until some one from among our own physicians shall present us with better accounts of the more noted mineral springs of this country.

D. F. C.

ART. XVI. *Der Wasserkrebs der Kinder.* Eine monographie von Dr. ADOLPH LEOPOLD RICHTER, Stabsarzte des Königlichen Medizinischen Friedrich-Wilhelms-Institutes, &c. 8vo. pp. 84. Berlin: 1828.

On the Water-Canker of Children. By A. L. RICHTER, M. D., &c.

Water-canker is the popular denomination, in Germany and Holland, for the gangrenous ulceration of the mouth, which is occasionally observed in children, especially of the poor, or as an endemic in the asylums and other institutions for the reception of destitute infants. This affection, which, from the insidious manner of its attack, the rapidity of its progress, and its very great fatality when neglected or improperly treated, must be viewed as one of the most formidable of those which occur during infancy, is happily of not very frequent occurrence in this country; while in various parts of Europe it would appear to prevail extensively, especially in hospitals, among the offspring of the poorer classes, and in low, damp, and otherwise unhealthy locations. Thomassen and Thyssen, two recent Dutch writers on the disease, state that it occurs often as an epidemic in the Netherlands, after different eruptive and gastric affections. We are presented, in the treatise before us, with an able and interesting digest of the present state of medical knowledge in relation to the disease; and as there is scarcely an English writer who has given any account of its symptoms, pathology or treatment, we have been induced to present to our readers a brief analysis of the more important observations of Dr. Richter, notwithstanding several years have now elapsed since the period of their publication.

Dr. R. considers the general symptoms by which the gangrenous ulceration of the mouth is accompanied, to have a close affinity to those proper to the disease described by the older physicians under the name of *stomacace*, of which he believes it to be, in fact, a mere variety.

He divides the water-canker, according to the difference of its causes and phenomena, in three distinct species.

1. *The Scorbutic.*—This is by far the most frequent. It includes, according to our author, all those cases which occur endemically in orphan asylums or in situations bordering upon the sea. The local affection is, ordinarily, preceded by a series of debilitating causes, or by some disease which has impaired the organic energies of the system. The precursory symptoms are general debility, listlessness, indisposition to engage in play, or even to move about; the little patient cries frequently, is discontented, and desires to sleep, without the ability. The countenance becomes pale and dejected, and a puckering of the cheeks about the corners of the mouth is observed. The child becomes emaciated, and is subject to nocturnal sweats; it has no appetite for food, but has in general an increase of thirst. It continues in this state often from eight days to two weeks, before the local disease occurs. At length the patient experiences sharp pains in his mouth and gums; a fœtor of the breath is soon observed, accompanied with an increased flow of saliva; a sense of itching or pricking and heat is experienced in the gums, which assume a dark red hue, become swollen, and bleed upon the slightest touch. The salivation augments rapidly, accompanied usually with some discharge of blood; at the same time the salivary glands become swollen and painful. The appearance of the mouth at this period has a close resemblance to that ordinarily induced by the use of mercury, so much so, that experienced physicians have often attributed the disease to the latter, notwithstanding the parents of the child have asserted that no medicine of any kind has been administered to it.

When the local disease is not arrested, the periosteum of the gums separate from the roots of the teeth, causing these to become loose, and frequently to fall out of their sockets. Fever generally occurs about this period, at first being confined to the latter part of the day, and accompanied with an increase of the

night sweats; a diarrhœa is also of not unfrequent occurrence. The disease may continue in this state for weeks, or even months. Generally, however, in a few days, actual gangrene or gangrenous ulceration occurs. The gums become covered with ash-coloured vesicles, which, rapidly enlarging, coalesce and rupture, laying bare the gums beneath in a black and gangrenous condition. When ulcerations occur, they present slightly inflamed, elevated, uneven and irregularly circumscribed edges, with a rough surface, of a gray or rather greenish colour. When separation of the black or gangrenous portions of the gums takes place, an ulcer, similar in form to the slough, remains, which assumes immediately a gangrenous appearance. The gangrene rapidly extends itself, laying bare the alveola and inferior maxillary bone. The teeth fall out, and portions of dead bone are thrown off, provided the patient does not sink under the disease at an earlier period. The gangrene extends from the gums to the lips, cheeks, and other soft parts of the face, which become more and more swollen as the disease progresses. At this period of the disease, but sometimes earlier, there is a difficulty experienced in moving the lower jaw, in consequence of which the mouth becomes firmly closed. This evidently arises from the swelling of the soft parts, and the pain produced by every effort to move the jaw.

One or more grayish spots make their appearance upon the mucous membrane of the mouth, in a few hours changing into ulcers that present a similar character to those already described, and producing invariably a great loss of substance. The gangrene will often extend itself, in from three to seven days, over the whole of the soft part surrounding the mouth. The fever, augmenting in intensity, now assumes a nervous or hectic character, and the child dies, generally about the eighth, or, at the latest, on the fourteenth day from the commencement of the gangrene; its body presenting all the indications of a general colliquation.

2. *The Gastric Water-canker.*—This, according to Dr. R., is but rarely met with. Many of the cases reported by Boott, Lund, A. G. Richter, Cullen, and other writers, he believes to be of this kind. It is attended by the following symptoms: Loss or augmentation of appetite during the entire continuance of the disease; a coated tongue, but seldom any aphthæ, are observed. There is not any affection of the general system as in the former species, the disease attracting but little attention until gangrene has occurred. The occurrence of the gastric form is in general sudden; the patient becomes all at once agitated and peevish, and is affected with slight accessions of fever, especially if the intumescence of the face has already commenced. These symptoms are usually accompanied with a sense of uneasiness, nausea, vomiting, diarrhœa or constipation. The gangrene, in place of commencing at the gums, occurs first in one of the cheeks, the commissure of the lips, or in the mucous membrane of these parts; extending thence, when the disease has attained its height, in many instances to the gums and maxillary bones. The local affection commencing in the cheek; this becomes swollen, hard, red, and shining; an increased flow of saliva takes place, and there is exhaled from the mouth a peculiar and highly offensive odour. Upon the inner surface of the affected cheek will be found one or more small, ill-looking vesicles, which in a few days rupture and give rise to a malignant ulcer of a dirty gray colour, which augments rapidly in size, having a rounded form, with red, distinctly circumscribed edges. The ulcer within the cheek is not always immediately detected, and it is sometimes entirely overlooked, as well from the external swelling occupying the whole of the attention of the physician and attendants, as from the patient being unable to open the mouth sufficiently wide to permit of an examination of the internal surface of the affected cheek. The ulceration within becoming deeper and more extended, there occurs on the external surface of the cheek, where the swelling is the greatest, a livid spot, surrounded by a red areola; this soon acquires a

darker hue, and, increasing in extent, in the course of from four to eight days reaches the lips, nose, and surrounding parts. Portions of it become soft and acquire a gray or greenish hue, and present all the characters of humid gangrene; while other parts are completely mummified, hard, and of a deep black colour. An examination of the mouth now will exhibit a destruction of the gums, opposite to where the gangrene in the cheek had commenced, the teeth being here loose, while the residue of the gums are apparently entirely unaffected. When the gangrene of the mouth has arrived at its highest pitch, no difference whatever is discoverable between the present and preceding species of the disease, the whole of the mouth and its parietes being equally affected in both. In the progress of the disease, the general functions of the system become more and more affected; the appetite is entirely destroyed; the thirst augments; the symptoms of gastric disorder augment in intensity; the diarrhœa becomes more copious, and the abdomen is distended with gas; the debility of the patient rapidly increases, while the intellectual functions remain unaffected even to the last. The fever assumes finally a nervous character; the little sufferer falls into a soporose condition; symptoms of universal colliquation now manifest themselves, and death occurs.

3. *The Metastatic Water-Canker.*—This, according to Dr. R. is, next to the scorbutic, the species of the most frequent occurrence. In general it succeeds to acute diseases of the skin, as small-pox, measles, scarlatina, &c., when these have not run regularly through their several stages, or have been suddenly arrested during their evolution. The disease usually commences abruptly, without being preceded by any peculiar symptoms from which its occurrence can be anticipated. In all cases, however, the patient is affected with more or less debility, resulting from the preceding disease. It is in the soft parts surrounding the mouth that the gangrene commences. A hard indolent tumour, deeply seated, and about the size of an almond, is first perceived, with a slight degree of redness of the skin by which it is covered. Within two or three days the tumour augments in size, and the skin becomes of a deeper red. The inner surface of the cheek now assumes a gangrenous appearance, while an extremely offensive odour is exhaled from the mouth. There are exacerbations of fever towards evening; the appetite of the patient is, however, but little affected. The external circumscribed redness of the cheek soon fades, assuming first a livid, then a grayish hue, surrounded by a red areola, which extends itself as the disease progresses. The central sphacelated portion becomes often completely black within a few hours. It will now in general be found, that the gums, in the immediate neighbourhood of the spot where the gangrene commenced, are in a state of sphacelus; the teeth here soon become loose, and finally fall out. Death, in this species of the disease, usually occurs at an early period, consequently necrosis of the maxillary bones is rarely observed. As the local affection progresses, the general powers of the system sink, a colliquative condition presents itself, and the patient expires without exhibiting any symptoms of a nervous character.

Dr. Richter has observed a much milder species of the disease occurring after an attack of measles that had run an irregular course. Gangrenous patches varying in size, of a dark brown colour, and surrounded with a red areola, occurred upon the lips near their angles, as well as upon the cheeks, while the general system of the child remained apparently unaffected. The gangrenous patches were preceded, for about two days, by a redness of the parts in which they occurred. They appeared to be entirely confined to the skin, for after the sloughs separated there was but little loss of substance. Suppuration of a favourable character immediately commenced, followed by granulation and cicatrization. At the right angle of the mouth, the whole thickness of the lip was, however, affected with gangrene, but the small opening which resulted

from the separation of the slough, nevertheless quickly closed, the loss of substance being supplied by abundant granulations.

Much obscurity exists in relation to the real character of the gangrenous affection under consideration, as well as to the cause of its rapid progress and very great mortality. The numerous hypotheses which have been advanced, by the German writers especially, in relation to these important points, are briefly examined by Dr. R., and rejected as unsatisfactory. Drs. Klaatseh and Hesse have attempted to prove that the gangrene affecting the gums and soft parts surrounding the mouths of children, is to be attributed to a decomposition of these textures similar to that which occurs in the softening of the stomach, uterus, and other organs, independent of and altogether unconnected with true gangrene. This opinion is strongly combated by our author, who maintains that the disease is a simple mortification, resulting from a preceding inflammation of the parts in which it occurs, of an asthenic character. All the peculiarities by which the disease is characterized being attributable chiefly to the peculiarities of the infantile organization, debilitated by exposure to unwholesome air, by improper or deficient food, deficient exercise, &c.

Water-canker, according to Dr. R., occurs almost invariably in young children of a very delicate constitution, of a scrofulous diathesis, with soft and flaccid muscles, pale skin, and light hair, and in whom, very generally, the functions of assimilation and nutrition have been depressed from a series of morbid causes.

By a reference to all the observations on record, it will be found, that in no instance has the disease been noticed as occurring in children of a robust and healthy constitution; in every case the health and strength of those afflicted with it are described as having been previously undermined by the influence of some debilitating cause or causes. The disease is almost exclusively confined to the children of the poorest classes—it is seldom or ever observed in the children of those persons who enjoy the comforts of life, and are able to pay a due degree of attention to the nursing of their offspring.

The causes enumerated, as those favouring the occurrence of gangrene of the mouth, are insufficient or unwholesome aliment, the use of immoderate quantities of cheese, or of fish, bacon, and other salted food; exposure to a damp or impure atmosphere, or to the air of small, low and ill-ventilated apartments; personal and domestic filth; deficient exercise; and various chronic diseases. As the children of poor persons residing upon the borders of the sea, are exposed at one and the same time to many of the above morbid causes, gangrene of the mouth is, consequently, extremely prevalent in various parts of Holland, Sweden, and Great Britain. In the large cities of Europe, as well as of this country, sporadic cases of the disease are met with among the neglected offspring of the poor, who inhabit the filthy and unventilated dwellings situated in the lanes, courts, and alleys of the suburbs—while it occasionally occurs as an endemic in the asylums and hospitals for children.

The age at which gangrene of the mouth most commonly occurs, is between the first and tenth years, but especially between the second and fourth; it has seldom been observed during the period of suckling.

The examinations of the bodies of those patients who have fallen victims to gangrene of the mouth, are too few in number, and have been made with too little accuracy, to furnish any facts calculated to throw light upon the nature of the disease.

Among the most ordinary and fruitful of the remote causes of gangrene of the mouth, Dr. R. enumerates a scorbutic affection occurring during infancy. In Poland, Denmark, Norway, Sweden, England, Scotland, and other countries particularly exposed to a humid state of the atmosphere, and also in situations along the borders of the sea, as well as those liable to occasional inundations, or to a superabundance of moisture from other causes, the scurvy, as is well

known, is a disease of ordinary occurrence; it reigns there as it were epidemically, particularly among such of the inhabitants as live chiefly upon salted provisions, or those of an unwholesome or innutritious quality; and it is in the above countries and situations also, that gangrene of the mouth in children is the most prevalent.

In perhaps a majority of cases, gangrene of the mouth is dependent upon gastric irritation. Most of the causes already enumerated act, no doubt, in its production by disturbing the healthy condition of the digestive and assimilative organs. The aphthous ulceration of the mouth in children is invariably, according to Dr. R., the result of a morbid condition of the alimentary canal. When, in infants of a feeble and delicate habit, this ulceration assumes a gangrenous aspect, it constitutes a genuine case of water-canker. Dr. R. enumerates, as another fruitful source of the latter disease, the previous occurrence of febrile affections, especially the exanthematic; an imperfect crisis, or the sudden suppression (metastasis) of the eruption would appear, he remarks, to favour, in an especial manner, the production of gangrene of the mouth.

According to our author, the gangrene of the mouth is but little under the control of any remedial agents we are yet acquainted with. He cites the experience of those physicians who have had an opportunity of studying the disease, in evidence of its very general mortality. By the fifth, or at furthest, the fourteenth day from its invasion, the little patient usually sinks under the state of exhaustion which then suddenly occurs; a circumstance that has excited the surprise of all; the general health of the system being so little impaired that, to those unacquainted with the disease, such a termination would not have been anticipated. We are perfectly aware that when the real character of the disease is misunderstood; when it is overlooked in its first stages, or treated by inert or improper remedies, its termination will, very generally, be fatal; but our own experience has taught us that, when properly treated from its commencement, the progress of the disease may be very readily arrested and the life of the patient preserved.

According to Muys, Lund, Seibert, Klaatsch, and Reimann, they have very generally succeeded in curing the water-canker, when it commenced by a tumour or livid spot in the cheek; and it would appear to Dr. R. that when the disease occurs subsequently to affections of the stomach, it is of a less malignant character than when it succeeds to fever or diseases of the skin in individuals of a scorbutic habit. It is always peculiarly destructive to life when it occurs as an endemic. In the asylums and hospitals for children in Europe, the disease, when it makes its appearance, very generally terminates fatally. In children who are constantly exposed to the influences of those morbid causes by which the disease is ordinarily induced, it is very seldom recovered from.

From the employment of internal remedies but little if any benefit has been found to result. Those which have been the most warmly recommended are the antiscorbutics, and various tonics and purgatives. Boott, the first English writer who has given an account of the disease, prescribes a drink composed of sarsaparilla and other vegetable substances, in great repute during the period at which he wrote, as purifiers of the blood. Van Lil recommends barley-water acidulated with lemon juice. Bruinmann, Bernstein, and Wendt, the sulphuric acid diluted with honey. Meza considered the spirit of cochlearia, combined with honey, &c. to be decidedly efficacious. The chief remedy, however, on which the majority of the writers upon the disease would appear to depend for its removal, is cinchona, alone or combined with other tonics, or with the sulphuric or muriatic acids; while a few declare that they have succeeded in curing the disease by emetics and purgatives. Dr. R. remarks that the antiscorbutics possess, in general, properties of too little activity to render them of any advantage in the disease under consideration. The sulphuric acid by itself or combined with

the bark produces, he remarks, in general, no effect, unless it be received into a healthy stomach and properly digested; while in the scorbutic variety of the disease the muriatic acid is too debilitating. He believes that the phosphoric acid, the juice of the lemon, with beer, Rhenish wine, and sugar, are remedies better adapted to the disease, and agree better with the stomach; they are, nevertheless, to be viewed merely as accessory means, having little influence upon the progress of the gangrene. When, by local applications, however, the extension of the gangrene has been arrested, he considers that, in every form of the complaint, the administration of those preparations of the bark which are most readily digested, as the infusion, the extract prepared without heat, the sulphate of quinia, &c., is indispensable to support the strength of the patient, and to enable his system to sustain the efforts which are necessary for the restoration of the parts that have been destroyed by the disease. At the same time, a light and nutritious diet should also be directed. Emetics and purgatives may, according to our author, be frequently resorted to with benefit in all the species of water-canker; in this opinion, however, we cannot coincide.

A very extensive list is given of the local remedies which have been reported by physicians, as adapted to arrest the progress of the gangrene. Boot, and others, recommend an ointment made by boiling together verdigris, honey, and vinegar, the diseased parts being first washed with a solution of alum in wine.

The same ointment is directed by Van de Voorde and Muys, with various combinations. Van de Voorde praises highly a solution in white wine of aristolochia, florentine iris, agrimony, hoarhound, &c., with the addition of myrrh and aloes, as a wash. Boot directs a gargle formed of a decoction of chervil, cinquefoil, myrrh, rose leaves, sage or white vitriol. Savaird, a wash made of a solution of camphor, alum and sugar in alcohol, or a decoction in wine of pomgranate peel, rose leaves and sumach. While inflammation exists, Van Swieten directs as a wash, a solution of muriate of ammonia and nitrate of potash, with an addition of vinegar or lemon juice, and subsequently, the spirit of cochlearia and theriac. Van Lil employed as a gargle, a solution of muriate of ammonia with gum lac, myrrh, spirit of cochlearia and honey of roses. Symmonds directed a wash of port wine and tincture of myrrh; Wéndt of an infusion of aromatics with arnica, vinegar and camphorated spirits; Rey, of tincture, and decoction of bark, with camphorated spirits. Pearson employed calcined alum, and a wash of a decoction of bark with sulphate of zinc, tincture of myrrh, lime water and alcohol.

The sulphuric acid either alone or combined with other articles is highly recommended as a local application by Van de Voorde, Van de Weil, Jourdaia, Bruinemann, and Courcelles. The application to the diseased parts of diluted muriatic acid, is recommended as a means which, in a number of cases, will arrest the progress of the gangrene, by Poupert, Van Swieten, Stelwagen, Siebert, Bernstein, Richter, Jadelot, Boyer, Isnard-Cévoule, Baron, and others; Klaatsch and Weigand, however, declare that they have employed it without perceiving any good effects whatever to result.

Klaatsch and Reinmann have seen the local disease speedily arrested by the application of acetic acid, but Weigand made trial of it without success.

Two cases are reported in which the application of a solution of muriate of soda as recommended by Rey, was found to be perfectly successful.

Thompson relates a case in the fifty-seventh volume, p. 533, of the London Medical and Physical Journal, which was cured by the local application of Peruvian balsam, and the internal use of tonics, with a generous diet of animal food.

The actual canterly was employed by Capdeville, Chopart, Desault, Isnard-Cévoule, and Baron; Lund, however, strongly opposes its use. The lunar caustic is strongly recommended by Guersent, in that form of the disease in which the gangrene commences on the internal surface of the cheek, and others

state that they have found it perfectly successful in all the forms of gangrenous ulceration of the mouth.

By Van de Voorde and Boyer, the space-lated portions of the soft parts are directed to be removed by the knife, and Jourdain, Berthe, Aerel, and Stelwagen advise the whole of the gangrenous parts to be removed, by incisions performed beyond the point to which the disease has extended, and then the edges of the wound to be united by the hair lip suture.

Having completed an examination of all the remedies that have been proposed for the cure of the gangrenous ulceration of the mouths of children, and after weighing carefully the evidence adduced in support of their respective merits, Dr. R. comes to the conclusion, that the most dependence is to be placed upon local applications; of these, he gives a decided preference to the muriatic, sulphuric, and acetic acids, and the muriate of soda. Dr. Heuter, who has written an essay upon the disease subsequently to the one before us, considers that the local remedies most to be depended upon are the acetic and muriatic acids used in conjunction, and Guersent, a still later writer on this affection, pronounces a mixture of muriatic acid and honey to be the very best local remedy to arrest its progress.

In every case in which the acids are employed, Dr. R. remarks, that to obtain from them beneficial effects, their application must be repeated every half hour, or at furthest every hour. They are to be applied to the affected parts either by a pencil, or by means of pledgits of lint moistened with them. Their use should not be discontinued until the gangrene ceases to spread, and granulations are formed.

Dr. R. is not prepared to recommend the excision of the gangrenous portions of the lip, notwithstanding the testimony adduced in favour of the success of the operation. The actual cautery, however, he considers to be a remedy from which much good may be anticipated, especially when the acids shall be found to fail in arresting the progress of the disease, or when the latter invades the whole of the lips and surrounding soft parts. In such aggravated cases, the application of the cautery should extend to the live parts surrounding those in a state of gangrene, in order that, by exciting in the former an increase of vital action, the progress of the disease may be arrested, and the separation of the sloughs facilitated.

We have thus presented to our readers a brief notice of the monograph of Dr. R. upon a disease which, in consequence of its malignant character, and the little that we at present know in relation to its true pathology and treatment, demands the serious attention of every physician. D. F. C.

ART. XVII. *A Clinical Treatise on the Endemic Fevers of the West Indies, intended as a guide for the young practitioner in those countries.* By W. J. EVANS, Esq., M. R. C. S. London: John Churchill. 1837. 8vo. pp. 309.

The endemic fevers of the West Indies are so closely analogous to, if not identical with, the fevers of the southern part of our own country, that they are much more interesting to us than to Europeans. We regret that, for the knowledge of southern diseases, we are obliged to depend, almost exclusively, upon the writings of Europeans who have passed a comparatively short time in warm climates, instead of relying upon the accounts which our own countrymen should have afforded us.

We like the style and the general spirit of this work; it is obviously based upon facts which have been observed with more than usual care. If it be not complete, its imperfection depends rather upon the insufficient number of the facts, and in some measure, upon the want of extensive observation of other

diseases, than upon any erroneous deductions from the cases which are related. The work is valuable as far as it goes, and must lessen the labour of subsequent inquiries into the fevers of hot climates.

The author observed the West Indian diseases at St. Lucia, one of the most unhealthy of the islands; so that he had both numerous cases to treat during a comparatively short residence, and witnessed diseases of the most severe types. This small island is volcanic, like others in the group; and is intersected by fertile vallies covered with a rich alluvial soil, and is here and there disfigured by morasses or lagoons. The rich vegetation of the tropics is constantly adding vast quantities of vegetable matter to the half putrid deposits already accumulated in the swamps.

The exhalation from the marsh surrounding Castries, the capital of the island, is peculiarly deleterious, and in case the vapour arising from it has been inhaled after nightfall, it sometimes produces an immediate attack of malignant intermittent; even more malignant than that of the celebrated Pontine marshes. This concentrated virulence of the marsh at Castries, was experienced by the author after passing it at night. He was sensible of a disagreeable odour while crossing the swamp, and was soon afterwards taken with nausea, followed by a paroxysm resembling in many respects the ordinary intermittent. The next day the fever returned with the usual symptoms of the disease.

The author draws an obvious distinction between the effects of exposure to the heat of the sun and those arising from the poisonous exhalations of the marshes, perhaps combined with the influence of heat. We have often seen the symptoms following exposure to a hot sun in Philadelphia, and have always found in fatal cases, that patients died with appearances of inflammatory action, or at least congestion of the internal organs; especially the brain and lungs. We were not convinced that this apparent congestion was the cause of the symptoms; on the contrary, we believed that it was a mere effect, and that most frequently the patients died from the influence of heat upon the functions of the nervous system. If the primary effects of heat do not prove fatal, a secondary inflammatory fever supervenes, with evident disturbance of the brain, and but few gastric or intestinal symptoms. Gastric and bilious fevers rarely arise from the rapid effects of insolation or coup de soleil; they seem in most cases to depend upon the slow effects of heat, especially alternating with cool nights; perhaps, in some measure, upon the exhalations of marshes. They are often caused by exposure to a degree of heat which is not sufficient to disturb the circulation of the brain, except in a moderate degree.

At St. Lucia the diseases which occur as endemic affections in the autumn of every year, assume different types according to the constitution of the patient, and the length of time during which he has remained in the island. Thus, while a native will merely experience a mild attack of intermittent fever, or a neuralgia of the intestines, or other parts of the body, an unacclimated European, will suffer from a severe intermittent or remittent. The very dogs introduced into the island, from Europe, in large numbers, are taken with similar remittent and intermittent fevers, and perish, in a larger proportion than human beings.

At the same time that the intermittent fevers are most prevalent, a certain number of cases present the characteristic symptoms of yellow fever; as yellow suffusion, black vomit, and extraordinary violence of gastric symptoms. These cases recur every year, and are confined to unacclimated residents. The author never witnessed the epidemic form of yellow fever, which is regarded as contagious by some writers. He considers the sporadic cases as genuine examples of yellow fever, but declares that not the smallest evidence of contagion was ever presented to him, during his residence at St. Lucia. The question of the contagious property of the epidemic form is not discussed by

Mr. Evans, although it is evident that he leans towards the side of the non-contagionists.

The great questions relating to yellow fever are, therefore, left unresolved, excepting so far as to establish the very close connexion between sporadic yellow fever and some cases of merely aggravated bilious disorders. But we do not possess sufficient documents, collected with care and free from party excitement, to enable us to decide positively as to the connexion of yellow fevers with other similar affections in warm climates.

The author states that within a few years the doctrines of Broussais have found many converts in the West Indies. Many of the English practitioners are more or less under the influence of these views, and without regarding gastritis or gastro-enteritis as the sole pathological element in fevers, they consider these local inflammations as essential parts of the disorder, arising very early in its course, and demanding modifications in the treatment. "The rational treatment" proposed by Mr. Evans is, therefore, such as would meet the approbation of most intelligent practitioners in this part of the United States.

If the endemic fever assume the form of mere febricula or feverishness, the patient should be confined for a day or two to mild farinaceous articles of food, should use tepid baths, take horseback exercise during the cooler parts of the day, and take two or three grains of quinine in the morning. If there be also irritation of the liver, some leeches to the anus, or a few grains of calomel may with propriety be added to this treatment.

The treatment he proposes for the regular intermittent is such as is generally in use—Quinine during the interval, and in the paroxysm, remedies which are calculated to remove the congestion or irritation of particular organs, as a bleeding from the arm, leeches, cups, with a mild emetic and purgative if the functions of the liver be much disordered. The effects of emetics in relieving the affection of the liver, is singularly increased by the use of vegetable acid drinks, as tamarind water or lemonade. The materials for these beverages are found in such profusion in warm climates, that the indication of their use would seem obviously afforded by nature.

The cases of intermittent, in which the disease assumes a malignant form, are, in many cases, connected with a diseased condition of the blood, and require some modifications in the treatment. The author advises many small abstractions of blood from the arm or from the affected parts, especially the head, and speaks of the advantages of external fomentations to the abdomen. In our own practice we have found these cases most certainly relieved of immediate danger during the paroxysm by remedies which act as powerful external stimulants of the nervous system without abstracting blood. We have often seen the apoplectic symptoms of malignant remittent yield speedily to the application of numerous dry cups to the nucha, and between the shoulders, with sinapisms and blisters, when the symptoms were rather aggravated by the abstraction of blood.

The treatment of remittent fever is more difficult, and involves more important consequences to the patient. The author has just and correct opinions on this subject. This object is two fold, to get rid of the inflammation of particular organs, and as soon as an approach to apyrexia occurs, he advises the quinine to be immediately administered. This treatment, which consists chiefly of local depletion, fomentations, &c., combined with quinine in considerable doses as soon as tolerably complete apyrexia could be obtained, is that which was found most successful by the French, during their military occupation in Algiers, where they have had to contend with the most anomalous and severe forms of intermittent fever.

W. W. G.

ART. XVIII. *Die Syphilitischen Krankheitsformen und ihre Heilung. Mit Steter Rücksicht, auf die Beobachtungen und Erfahrungen der neuesten Zeit, dargestellt von GEORG FREDERICK HANDSCHUCH, der Medizin, Chirurgie und Entbindungskunde Doktor. München, 1831. 8vo. pp. 436.*

On the different forms of the Venereal Disease, and their treatment, with especial reference to the results of recent observations and experience. By G. F. HANDSCHUCH, M. D.

In a professed review of Dr. Handschuch's work, we should certainly feel ourselves called upon to contest the correctness of many of the positions he has laid down in reference both to the treatment and pathology of the several forms of the venereal disease; we must, nevertheless, concede to the author the credit of having produced a most interesting treatise, in relation to its literature, origin, character, and therapeutics. Every section of the work is replete with curious and practical information that will be found of value to the student, as well as to the practitioner. Dr. Handschuch has evidently consulted all the best writers, especially those of a recent date, on the subjects of which he treats, and has carefully collated their respective observations and opinions.

He would appear to maintain the specific character of the venereal disease, although not in precisely the same sense as some of the older writers. He denies, however, that mercury is the only remedy to be depended upon for its safe and effectual eradication. A vast accumulation of facts prove indisputably that the disease may be cured, in any of its forms, by many other remedial agents, as well as by the more restorative energies of the organism aided by a suitable diet and regimen. Mercury, must, however, according to our author, be still continued to be regarded as our principal remedy for the venereal affections, in consequence of its general efficacy, but by no means as the sole and indispensable one, as it was for a long time, and still is by many physicians. It has in fact, he adds, not unfrequently entirely failed in effecting a cure. They who maintain, on the one hand, that the venereal disease can be effectually eradicated from the system only by some one or other of the mercurial preparations, as well as they who, on the other, proscribe these preparations entirely in its treatment, equally err, in the opinion of Dr. H., by running into therapeutical extremes. It is not sufficient to show that a remedy may be dispensed with, without the cure of a given disease being in consequence prevented or retarded, in certain cases—the question is, may it not, in the same disease, under other circumstances, be resorted to with decided benefit? The proscription of mercury from the treatment of venereal complaints, seems to have been, in a great measure, owing to the excess to which it was formerly pushed causing it to produce deleterious effects upon the system scarcely less to be dreaded than those resulting from the disease against which it was supposed to act as a specific.

While we declare that our own convictions and experience are in favour of the non-mercurial treatment of the venereal disease, we would, nevertheless, recommend the work before us to such of our readers as would desire to become familiar with the observations and experience of the most eminent medical writers of Europe, in relation to the several remedies and modes of treatment that have been recommended in the different syphilitic affections.

D. F. C.

ART. XIX. *Transactions of the Medical Society of the State of New York. Vol. III., Part II. Albany: 1837. 8vo. pp. 310.*

Fourteen papers are comprised in the Transactions of the Medical Society of the State of New York, for 1837; of these several are of a highly interesting

character. We have already given separate notices of one or two of them, in preceding numbers of this journal, and we hope to have an early opportunity of noticing a few of the remainder. On the present occasion we have room only to present to our readers an outline of the observations of the late Dr. Avery, of New York, "on the causes of the large proportion of still-born children in our large cities over that of London."

This is certainly a most important subject, and one that demands the attention of every humane and enlightened physician. The number of interments which, in our bills of mortality, are referred annually to the head of still-born children, is of such an appalling extent, as to call loudly for a close investigation into the causes by which it is produced, with the view of ascertaining the means by which these causes may, if possible, be removed. We suspect that in most of our bills of mortality, the term still-born, is employed in a very loose manner: including not only those cases in which the infant dies during the progress of labour, but also cases of premature birth. To arrive at a greater degree of accuracy upon this point, the Philadelphia Board of Health requested, a few years since, that physicians should state in their certificate, when a child is still-born, whether the birth had occurred prematurely or at the full term. This request has, however, been complied with in only a very few instances, consequently we are unable to say what is the actual proportion of infants still-born at the termination of the full period of utero-gestation, and of premature births, to the entire number of deaths which occur in either of our principal cities.

"The material difference," remarks Dr. Avery, "in the proportion of still-born children in our populous towns and those of Great Britain, has deservedly excited considerable interest."—"The only possible mode of obtaining positive information on this subject would be from registers, in which the entry of all the births in different towns or districts, is strictly enforced by law. As no registers, however, of this sort are kept, either in our own cities or those of England, the next most probable source of information are the bills of mortality, but a great variety of circumstances will render the deductions drawn from these more or less inaccurate. For instance, the prevalence of epidemics, the greater or less influx of strangers, the number of children born out of wedlock, &c."

"No satisfactory inference can be drawn from the record of births kept by individuals, or even at Lying-in Hospitals, as they must be more or less confined to particular classes. Thus in neighbouring cities in the same kingdom, with no very great difference of climate or condition of the inhabitants, there is a material difference in the reports of Lying-in Hospitals. It appears from an abstract of the registry of the British Lying-in Hospital for married women, Longacre, London, that since its institution in 1749, there have been born 34,027 children, of which 1369 were still-born, being in the proportion of one in 21.8. During the year 1828, 2122 children were born in the eastern district of the Royal Maternity Charity, under the superintendence of Dr. F. H. Ramsbotham, London, of which 106 were still-born, being one in 22.8. It appears from an abstract kept at the Lying-in Hospital in Dublin, since it was first opened in 1757, that 114,468 children have been born, of which 6691 were still-born, being one in 17.1."

Referring to the best sources of information within our reach, the bills of mortality, those of London for the ten years ending with 1821, exhibit a proportion of still-born to the entire number of deaths of one in 27.5. By the bills of mortality for the city of New York for fourteen years, ending with 1829, the proportion is one in 17.7; for the first five of these years, it was one in 21.8; for the last five years one in 16.5. By the bills of mortality of Boston, for ten years, ending with 1829, the proportion is one in 13.8; for the first five of these years it was one in 12.3; for the last five, one in 15.6. The bills of mortality of Philadelphia for twenty years, ending with 1826, exhibit a proportion of one in 18.1; it being for the first five of these years, one in 17.7; in the last five, one in 17.4.

"When we consider the number of strangers, particularly foreign emigrants of all ages," Dr. A. remarks, "who annually arrive at New York, Philadelphia, and Boston—the frequent visitations of epidemic diseases, some of which, as dysen-

tery and cholera, never prevail to any great extent in London, at least did not during the years included in the above bill of mortality,—and the probably much smaller number of children born out of wedlock in our cities, owing to the greater ease of providing for a family, and other encouragements to matrimony, all of which circumstances more or less affect the proportion of still-born in the foregoing bills, it can hardly be doubted that a much larger number of children are born dead among us than in London."

In regard to the causes of this greater amount of mortality, Dr. A. denies that it can be attributed either to want of skill in those who act as accoucheurs, or as some have supposed to the abuse of ergot.

"It appears from an abstract of the registry of the Philadelphia Alms-house, from 1797 to 1815, a period of nineteen years, that the proportion of still-born was one in 11; and from a register kept by that excellent accoucheur, the late Dr. Wm. Moore, that in his practice the proportion was one in 12.3; in the British Lying-in Hospital for married women, one in 24.8; in the Royal Maternity Charity, one in 22.8; in Merriman's list of cases, one in 19.7, and in the Dublin Hospital, one in 17.1. Now the mortality at the Philadelphia Alms-house, and in Dr. Moore's practice, cannot possibly be attributed to the want of skill, or to the abuse of ergot. As to Dr. Moore, it is well known that by far the largest portion of his practice, was anterior to the general use of ergot, and I think after he became acquainted with it, he never employed it to any considerable extent."

Hence Dr. Avery is of opinion, that the number of still-born children occurring in our cities, must be referred to some agent or agents acting generally, and not to the want of skill in the medical profession, nor to the abuse of ergot. To ascertain these general agents, he examines first, "what are the *most common causes* of the death of the fœtus in all countries?" and secondly, "whether these causes are influenced by climate, diet, habit, and modes of living?" The most common causes of the death of the fœtus in all countries are, he remarks, "1st. whatever occasions the premature expulsion of the fœtus, and 2nd. whatever hinders its natural delivery at the full time."

"The causes which occasion the premature expulsion of the fœtus, may be divided into accidental and predisposing. The accidental are falls, blows, immoderate efforts of every kind, frights and other mental agitations, &c. These require no examination. The predisposing causes, are undue vascular fulness, great susceptibility of the system to the action of external agents, and probably morbid irritability of the uterus and its appendages."

"It is true, the fœtus may die without any apparent cause, and be expelled in a putrid state; the placenta may be attached over the os uteri, and occasion its destruction, &c., but these constitute but a small portion of premature labours, and those brought on by hemorrhage and convulsions in the seventh and eighth months principally depend upon plethora and undue irritability, as they are oftenest prevented by blood-letting, anodynes and low diet."

"Now, if it be admitted," remarks Dr. A., "that there is a more rapid circulation of the fluids, a stronger tendency to plethora, and a greater susceptibility of the system to the action of different agents during utero-gestation, than in the unimpregnated state, and if it can be made appear that our climate, diet, habits and modes of life, undoubtedly increase this condition of the system, more than those of England, will it not be a reasonable conclusion, that the fœtus will be prematurely expelled oftener here than in England?"

This Dr. A. attempts to prove—in England, he observes, although the weather is variable, still the changes are not comparatively great, and the coolness and moisture of the atmosphere appear to elicit the blood to the surface, and keep up a free circulation in the dermoid vessels, which probably has considerable effect in preventing an undue elevation of the sensibilities of the internal structures. The climate of the United States, on the other hand, though not so variable as that of England, is marked by variations of heat and cold much more sudden and extensive, particularly in the northern and eastern states. For weeks together our sky is serene and almost cloudless, our atmosphere dry, and warm and cold weather follow each other with great regularity through the

different seasons. But the heat of summer vies with that of the tropics, and the cold of winter approximates in intensity to that of the poles; our bodies relaxed and debilitated by the extreme heat of one season, are ill prepared to sustain the severe cold of the other, and when in some measure habituated to the latter, must suffer more or less from the effects of the former. As a people, the Americans are paler and less robust in appearance than the English; our females are scarcely mothers when the rose entirely fades from their cheeks; their forms are altogether more delicate, and they grow old at a much earlier period than those of Great Britain.

"Diseases depending upon congestion in the abdominal viscera, morbid irritability of the mucous surfaces, hepatic derangements and fevers, characterized by bilious symptoms, are much more frequent in America."

"In ten years ending in 1829, there were reported by the City Inspector of New York, out of a population of about 200,000, 1522 deaths from dysentery, 700 from diarrhœa, and 221 from cholera morbus, making in all 2446."

"In London, with a population of between a million and a million and a half, for ten years ending in 1821, the bills of mortality contain less than 100 deaths from all three of the above diseases."

The great prevalence of bowel complaints would not appear, however, as some have supposed, to augment the number of abortions and premature births. From the bills of mortality of the city of New York, from 1819 to 1828, inclusive, it will be seen that there is no material difference between the number of still-born children in the months in which bowel complaints are most prevalent, than those in which they are least so—thus the months of July, August and September, of the above years, gave 200, 179 and 168 still-births respectively, total 547; while the months of December, January, and February, gave 138, 157 and 152 respectively, total 567.

In speaking of the difference of climate between this country and England, Dr. H. remarks, that in the latter, during winter, the temperature may fall for a short period below 10°; but it is uncommon for it to remain any considerable number of days much below the freezing point. So in summer, it may rise to 85°, but rarely remains long above 70°. During the warmest days, the moisture of the atmosphere and the winds, occasioned by the proximity of the sea, render the nights almost always cool. In London, the mean temperature of July 1821, was 59° 80'; of July 1822, 61° 91'; of January 1821, it was 37° 67'; of January 1822, 38° 70'. In New York, the mean of July 1829, was 73°; of July 1830, 80°; of January 1829, it was 28°; and of January 1830, 26°. According to Dr. Clarke, the mean temperature of the winter months in London is 39°; and of the summer months, 62° 32'. The mean temperature of the winter months in New York, according to a report made to the Medical Society, was in 1829, 31°; in 1830, 35°; of the summer months in 1829, 74° 5'; in 1830, 76°. The mean temperature in Philadelphia of the winter months from March 1811, to February 1830, was, according to Dr. Emerson, 32° 5'; and of the summer months 71°. From a table given by Dr. Avery, it appears that in 13 years ending with 1821, the mercury in London rose but twice above 86°, and fell but twice below 10°. While from a table kept in New York, it appears that in 8 years ending with 1828, the mercury fell in every year but the last below 10°; and in one, 5° below 0, the lowest fall being taken at 8 A. M.; while within the same period the mercury rose every year excepting one above 90°; the highest rise being taken at 3 P. M. According to Dr. Emerson's observations, the thermometer, in a period of 10 years, fell one year to zero; in four years below 10°; in one year to 10°, and in the remaining four years to 11°, 12°, 17° and 18° respectively.

If it be proved that the irritability of the system and tendency to plethora are greater during utero-gestation than in the unimpregnated state, and that our climate has a tendency to augment still more this irritability, and to encourage

the disposition to plethora so as to cause premature labour or abortion, we can readily understand one of the causes producing a greater proportion of still-births in this country than in England.

"In all large cities, refinement, luxury, idleness, the irregularities of a life of gaiety and dissipation, the influence of passions and emotions of the mind, highly stimulating food and drinks, improper dress, and a thousand other circumstances, not to mention the effects of bad air, may be set down as causes calculated to impair the healthy performance of the various functions of the body, to render it morbidly irritable and occasion an unequal distribution of the circulating fluids to the different organs; of course the number of still-born children must always be greater in cities than in the country."

In a report of 1200 cases of labour by Dr. Arnell, of Goshen, N. Y., there were only 23 still-born, or one in 52, while in Dr. Moore's list there was one in 12.6.

The habits and modes of living as well as the diet of our females, differ considerably from those of the English. The American female, instead of taking that amount of daily exercise in the open air, to which the married ladies of England are accustomed, pass the greater part of their time within doors in sedentary occupations: "consequently their system becomes preternaturally sensitive, and a tendency to plethora and mucous irritability is increased."

In regard to diet—"Pleasantness and simplicity," we are told, "are the characteristics of an English table, while profusion and endless variety are in some measure peculiar to America. Animal food is generally eaten here for breakfast and dinner, in England for dinner only; and puddings, pies and sweetmeats, these indubitable marks of good housewifery among us, are far less common in England."

In those who lead indolent lives and who feed luxuriously—more blood will be made than can advantageously be employed, consequently there will be "not only plethora, but augmented irritability, and, therefore, a liability on the part of the (gravid) uterus to be thrown into contraction by smaller causes than ordinary." (Dewees.) And Dr. A. conceives this effect of a sedentary and luxurious mode of life to be more liable to occur here than in England, in consequence of the greater warmth of our climate.

In regard to dress, Dr. A. remarks, that with our females more attention is paid to appearances, while the English female pays greater regard to comfort. This is more especially evinced in the greater care taken by the latter to keep the feet and lower extremities warm by suitable clothing. It is unnecessary, Dr. A. conceives, to enlarge upon the subject of the immediate sympathy existing between the feet and legs and the uterine system, and the effects of exposure of the lower extremities to cold and moisture, more especially in those who are enervated by their habits of life.

The baneful influence upon health of the tight-laced corset, which fashion here prescribes to every female almost from infancy, is well understood by physicians; and when its use is continued during pregnancy, even sometimes up to the period of confinement, no one will object to include it among the causes of abortion and premature delivery; and a very little reflection will convince every one acquainted with the structure and physiology of the human frame, that it is also a frequent cause of difficulty even when labour occurs at the full period.

"Another point worthy of notice is, the premature introduction of our females into society—a step which is much earlier taken here than in England."

About the period of puberty in females, a great variety of causes, which at a somewhat earlier or later period would be comparatively harmless, are liable to produce very serious consequences. "The formation of the constitution which is now going on, may be easily interrupted—the passions are unduly excited—the natural sensitiveness of the system morbidly increased; and the whole frame materially enervated." The passions and imaginations being prematurely called forth by a too early intercourse in mixed society, must have a powerful influence upon the uterine system, and consequently, upon the sys-

tem generally." We need hardly notice the deleterious effects upon the young female of late hours, crowded and overheated rooms, exposure to the night air, &c.

"One of the consequences of premature introduction into society is very early marriages, which are much more common occurrences here than in England."—"Becoming a mother before the constitution is fairly formed, prevents many females from arriving at the maximum of strength, and occasions premature old age."

"If the view which has been taken of this subject be correct, it must be evident,

"First. That the standard of female health is lower in our large towns than in London, and that the difference is occasioned by the combined effects of climate, diet, habits, and modes of living, &c.

"Second. That as the delicate female is much more liable to miscarry than the robust, the premature expulsion of the fœtus must oftener occur in this country than in England."

The causes which commonly prevent the natural delivery of the fœtus at the full period, Dr. A. believes we have no good reason for considering as of more frequent occurrence in this country than in England. Indeed, it is more than probable that one of them at least—distortion of the pelvis—is much more common in England, especially in the manufacturing towns.

"The inference which may be drawn from the foregoing remarks are, first, that the larger proportion of still-born in our cities than in London, is not at all dependent upon accidental circumstances, but upon a combination of causes which lower the standard of female health, and occasion the more frequent premature expulsion of the fœtus. Second, that the means of preventing this mortality must be found in an entire change in the habits of our females, from their infancy till they cease bearing children,—in instituting greater simplicity of diet, more proper clothing, more regular exercise in the open air, and in avoiding the causes of undue mental excitement, such as too early introduction to society, &c."

We have been led to notice the paper of Dr. Avery somewhat at length, as well from the importance of the subject upon which it treats, as from the many interesting observations it comprises. Whether the author has arrived at a correct estimate of the more efficient causes of the large proportion of still-born children exhibited by the bills of mortality of our large cities, will admit of some doubt. Unquestionably all the circumstances which he details have a deleterious influence upon the female constitution, and render her liable to abortion and premature labour; but we do not believe that the major part of the still-born cases annually reported are premature births. We do know that in Philadelphia a very considerable number of infants are still-born at the full period. To what cause this is to be attributed we pretend not to determine; facts that have fallen under our notice convince us, however, that in too many instances the destruction of the infant is to be attributed to the abuse of ergot, or to the want of skill in the accoucheur. We are persuaded that in not a few instances, where the death of the child has occurred during a protracted labour, caused by an unusually large size and firm ossification of the head, it might easily have been delivered alive by instruments, and the mother at the same time saved from many hours of intense suffering and anxiety. Until we have, however, more correct and satisfactory statistics in regard to the still-born cases which occur amongst us, no very certain conclusions can be arrived at in regard to their causes or prevention.

D. F. C.

QUARTERLY PERISCOPE.

FOREIGN INTELLIGENCE.

SPECIAL ANATOMY.

1. *Thymus Gland*.—M. KRAUSE asserts that the generally received opinion relative to the diminution and total disappearance of the thymus gland after the age of 12 years, is by no means confirmed by observation; for in nearly all the individuals of from 20 to 30 years old whom he examined, he found it well developed, and often larger than in young children. In persons of from 30 to 50, he has seen it of considerable size, and he has observed reddish-brown remains of it in others, even above the latter age. In young persons it generally retains its bilobate form, but its diminution seems to take place at its middle part, so that sometimes its upper and lower horns are connected by cellular tissue only. He has never observed any relation in the altering sizes of the renal capsules and thymus gland. The average weight of the latter in persons of between 20 and 30 seem to be $27\frac{1}{2}$ grains, and in well grown mature fœtus, 190 grains, but often much less; in one that died of thymic asthma it was 440 grains.—*Müller's Archives*.

2. *Minute Structure of the Teeth*.—FRÖNKEL in a dissertation prepared under the direction of PURKINJE, has given some important conclusions on this subject. The osseous substance of the teeth he says, has no similarity in structure to bone, except on the outer surface of the root, where there is a layer of true osseous substance; and this Müller himself has confirmed. The peculiar substance of the teeth (as observed in very thinly cut slices) consists of numerous closely-arranged parallel fibres, running more or less obliquely, or straight from within outwards, seldom branched, but united by an amorphous intersubstance, constituting the greater part of the tooth, the interspaces being five or six times broader than the fibres. These fibres, which both Purkinje and Müller have decided to be tubular, are, according to the latter, filled (at least in part) with earthy matter—salts of lime; it is they which give the opaque white colour to the sections of teeth, the interspaces being more transparent. On being treated with acids, and by examinations of carious teeth, it was further proved that the walls of these tubular fibres themselves are rendered firm and brittle by being permeated by earthy matter. The more transparent interspaces also contain earthy matter, either in scattered particles or chemically combined, as may be demonstrated by boiling sections in potash ley, when the animal matter being destroyed, they become opaque, white, and extremely brittle, and present numerous minute calcareous corpuscles.

The enamel is composed of simple vertical fibres, somewhat thicker above than below, of a quadrangular prismatic form, flexuous, and connected by transverse lamellæ; these prisms are usually placed obliquely on the surface of the dental substance. Müller, besides confirming this, has found that the enamel of the calf's tooth, while still soft, already consists of these prismatic fibres, connected

only by a transparent fluid material. All these observations have been confirmed by Retzius, so that they may now be looked upon as deciding this interesting point of structural anatomy.—*London Med. Gaz.*, May 1837, from *Müller's Archiv.* for 1836.

3. *Origin of the optic nerve.*—The result of a very lengthened consideration of the origin of the optic nerve in man and animals, by STEIN, (*De Thalamo Optico et Origine Nervi Op. Hevniæ*, 1831.) is, that in the former it is derived from the white fibres forming the upper covering of the optic thalamus, from some others coming from where the peduncles of the pineal gland are connected with the posterior commissure; from another fasciculus coming from the anterior, and a fourth from the posterior of the corpora quadrigemina. From the two latter is derived a minute bundle, which is lost in the crus cerebri, without being connected with the nerve. The commissure of the nerves is also connected with the grey lamina, which, covering the inner surface of the thalami, is connected with the tuber cinereum, and ascends between the anterior crura of the fornix and anterior commissure.—*Ibid.*

4. *Laryngeal and hypoglossal nerves.*—C. E. BACH confirms the idea of the descendens hypoglossi belonging rather to the cervical nerves than to the hypoglossal. The results of some dissections of the laryngeal nerves, which appear to have been made with the greatest care, are, that the laryngeal muscles are thus supplied. The crico-thyroideus always receives branches from the superior, rarely from the inferior; the inferior supplies the crico-arytenoideus posticus; the thyro-arytenoideus is supplied by the inferior, and sometimes by the superior; the crico-arytenoideus lateralis by both; the crico-thyroideus by the superior, and rarely by the inferior. These observations are very important as disproving the theories of Magendie respecting the voice; this physiologist supposing that the superior nerves supplied the muscles which narrowed, and the inferior those which widened the glottis.—*Ibid.*

5. *Structure of the intestinal glands.*—The patches at the end of the ileum, which have been long known under the name of Peyerian glands, are shown by BÖHM to consist of small capsules, lying in the submucous tissue, containing in a simple, not cellular cavity, a white, milky, rather thick fluid, with numerous roundish corpuscles of various size, but mostly smaller than blood globules. Round this capsule, which has apparently no excretory duct, there is a circle of minute tubules in the mucous membrane which open on its surface. The typhoid affection seems to consist of an exudation of a peculiar matter around the capsules, after which they pass into a state of suppuration, and form so many minute ulcers, which afterwards become confluent.

The Lieberkuhnian glands are simple follicles,—the white points at the bottom described by their discoverer being probably only morbid secretion.

The Brunnerian glands, found by BÖHM only in the duodenum, present a single excretory duct, leading to lobules, which are again subdivided, forming true conglomerate glands. The so-named glandulæ solitariae, occurring throughout the small intestine, and especially at its end, consist of capsules, containing the same corpuscles as the Peyerian glands, from which they differ in their isolated arrangement and the absence of the circle of tubes.

In the large intestine also he describes two kinds of glands: the smaller, found especially in the rectum, constitute simple tubules of various length, which is greatest in the rectum, where they form a particular layer outside the mucous membrane; the larger are round follicles with narrow openings, and are found principally in the cæcum and processus vermiformis.—*Ibid.*

6. *Meibomian glands.*—ZEIS has shown that these lie, not between the conjunctiva and tarsus, but in the substance of the tarsal cartilage itself,—the only instance where such an arrangement is found in a fibro-cartilage, to which tissue Miescher has shown that these belong.—*Ibid.*

GENERAL ANATOMY AND PHYSIOLOGY.

7. *Artificial Digestion.*—In our No. for May last, p. 196, we noticed the interesting experiments of Schwann, concerning the nature and constitution of the artificial digestive fluid discovered by Eberle, in 1834. Dr. TWEEDY JOHN TODD, with the assistance of Mr. Schweitzer, has provided himself with a supply of artificial digestive fluids, prepared after the method of Schwann, from the mucous membrane of the stomach of several animals, and has recently been making some researches to ascertain the nature of their peculiar action upon various alimentary substances.

The digestive fluids upon which Dr. Todd has operated were prepared from the stomachs of the ox, the horse, the dog, and the cat. Some, also, prepared from the upper portion of the small intestines was found not less powerful. The presence of the acid is essentially necessary in the preparation; when Mr. Schweitzer endeavoured to procure the digestive fluid with distilled water alone, or when he treated the mucous membrane in the same way by a weak alkaline solution, a rapid putrefaction stopped all further proceeding.

Various vegetable and animal substances were submitted to the action of these digestive fluids, at the ordinary temperature of the atmosphere, and the constant result in all the instances has been that *all these substances have been resolved into their elementary organic globules.* There has been no exception to this, so far as the experiments have extended, and these include, amongst vegetable substances, the artificial digestion of boiled cauliflower, of bread, and of vermicelli, not dressed; and, amongst animal substances, the white of egg boiled, the coagulum of blood, butter, fat, the muscular fibre of mutton, and of fish boiled and raw, filaments of the sciatic nerve raw, and scrapings of bone. The products of these artificial digestions, especially of the vegetable substances, compared with chyme taken from a dog which had been feeding upon ground oats, were very much alike, except that the watery part had been removed from the chyme. It is therefore reasonable to conclude, that the process of artificial digestion is essentially the same with the process of natural digestion in its first stage, that alimentary substances are not reduced to their chemical, but resolved into their organic elements; so that the globules, observed by physiologists in the stomach, are not formed by the process of digestion, but are the globules existing in the alimentary substances, developed or disengaged by that process.

The experiments, as yet, are not sufficiently extensive to admit of any comparative results, as regards the different power of digestive fluids prepared from different animals, and their relation to different kinds of alimentary substances. Much remains to be done in this and in many other respects; but especially in determining the different nature of alimentary globules produced from different organic substances. To this object Dr. T. is at present directing his researches; and, at the same time, making a useful application of this power of artificial digestive fluids, by endeavouring to ascertain the elementary organic constitution of various morbid heterologous structures; such as tubercles, &c.—*British Annals of Medicine*, June 9, 1837.

8. *A comparative examination of the Liquor Amnii in different periods of Fœtal life.* By Dr. C. VOGT of Berne.—Examination of the liquor amnii in two fœtuses of three and a half and six months, gives the following results:—

| | 3½ months. | 6 months. |
|--|---------------|---------------|
| Water - - - - - | 979.15 | 990.29 |
| Alcoholic extract, consisting of an unknown animal substance and lactate of soda - - - - - | 3.69 | 0.31 |
| Chloride of sodium - - - - - | 5.95 | 2.40 |
| Albumen determined as residue - - - - - | 10.77 | 6.67 |
| By boiling 9.45 | | |
| Sulphate and phosphate of lime and lost - - - - - | 0.11 | 0.30 |
| | <hr/> 1000.00 | <hr/> 1000.00 |
| Specific weight - - - - - | 1.0182 | 1.0092 |

The first fluid thus is in all its proportions far more concentrated than the other. Whether this has something to do with the development of the fœtus can

only be decided by multiplied analyses. It must be added that the first amnios was taken from a woman who died of inflammation, where all fluids are more plastic than in the normal state, and the other from a cachectic individual where the contrary state occurs. The last analysis of Frommherz, which is to be found in Berzelius's *Animal Chemistry*, differs from the analysis of Vogt; a difference which the latter explains by decomposition beginning, and the admixture of urine in the materials of the former's analysis.—*Ibid.* Ap. 1837.

9. *Composition of elastic tissue.* It was long esteemed remarkable that the elastic tissue should form an exception to the general character of the lower, least important, and least organized tissues, in not affording gelatine on boiling—by prolonged boiling. EULENBERG has now obtained it from all, even the middle coat of arteries. SCHWANN describes its physical characters: it consists of fibres of very different thicknesses, branched, and possessing sharp edges. It occurs not only in the situations where it has been usually described, but also in the bronchi and œsophagus, beneath the mucous membrane, in the lig. suspens. penis, in the fibrous bundles of the corpus cavernosum, &c. Even the outer and inner coats of arteries and veins contain a few fibres; in the large veins of oxen a thin middle coat of it is discoverable, but in man it cannot be certainly determined.—*London Med. Gaz.*, May 1837, from *Müller's Archiv.* for 1836.

10. *Contractility of arteries.*—SCHWANN has decided the important and problematical question of the contractility of the small arteries, by pouring cold water on the vessels of a frog when they had been previously in a warm atmosphere. They immediately contract, but after a time regain their diameter again. Müller remarks, that in this capability to contract under the influence of cold, but of no other exciting causes, as electricity, &c., the contractile tissue of the arteries resembles that of the dartos, and that which is found in many parts of the skin, as about the nipples and follicles, though the physical characters of the latter are so different from elastic tissue. [Is it not probable that the part of the artery which contracts under this excitement is (as we think Weber suggests in his *General Anatomy* prefixed to Hildebrandt) the outer coat, which in its long silky filaments much resembles the dartos?] Schwann has also discovered that the capillaries have an elastic coat, with circularly running fibres, exactly like the arteries.—*Ibid.*

11. *Extra Uterine Fœtation.*—DREHR describes a case where the fœtus was developed in the right fallopian tube, which burst at the fifth month. On examination a corpus luteum was found in the left ovary, but none in the right. How the ovum could have passed from the left tube across the uterus into the right, remains a question. The connexion of the latter with the uterus was abnormal, joining it at the union of the body and the neck.—*Ibid.*

12. *Observations on Weber's experiment on the power by which the head of the thigh bone is retained in the acetabulum.*—A full account of Weber's experiment was given in a preceding No. of this Journal, (Feb. 1837, p. 483.) Dr. LAUER has repeated the experiment under the direction of Dr. Fricke, with nearly the same results, but thinks that the conclusions drawn from it by Weber are deficient in proof, and of much too general a nature.

The force exerted by atmospheric pressure on the head of the thigh bone, is equivalent to the weight of a column of air the base of which is equal to the superficial area of the head of the bone, or to the weight of a column of mercury of the same base and of a height equal to that of the column of an ordinary barometer. Supposing now that the superficial area of that part of the head of the bone which is covered with cartilage is from five to seven inches square,* and fixing the average height of the column of a barometer at 28.409 Vienna inches, and taking the weight of a column of mercury of the given height and a quarter of an inch in diameter, at 12.6 pounds, we find the force with which the pressure of the atmosphere acts on the head of the bone, to be equal to from 63 to 88.2 pounds. Now admitting that the head of the thigh bone is retained in the acetabulum by

* The superficies of the largest head examined by Dr. Lauer was $6\frac{1}{4}$ square inches.

no other means, it would require a power equal to this weight, and acting in the direction of the neck of the bone, to separate the head of the thigh bone from the acetabulum, which, plainly, is not the case.

How different is a relaxed dead muscle from a living contractile one! How different at least with respect to sensation! Leaving out of view the proper contractile power of the latter, its mere vital tone, a property which the former does not possess, must contribute to this object. When a temporary contraction of the muscles of the hip-joint, whether effected through the agency of the will or by other causes, produces a transient or permanent shortening of the limb, and, *vice versa*, a relaxation of these muscles is followed by its elongation—facts first pointed out to me by Dr. Fricke, and of which I have daily opportunities of convincing myself—are we not justified in assuming, that muscles in the normal condition, even when at rest, are, by means of their vital tonicity alone, capable of at least contributing to retain the head of the thigh bone in the acetabulum? In making these observations I am far from denying the influence of atmospheric pressure in effecting the same object. Can the shortening of the limb which occurs in the first stage of coxarthrocase, before the head of the bone has undergone any change of form or situation, and which admits of being demonstrated by the measuring rule, be explained by a supposed partial increase of atmospheric pressure? Can the shortening of the lower extremity produced by contusion of the muscles of the hip-joint, and removed by the application of leeches or cupping glasses, be accounted for by variations in the pressure of the atmosphere? Are we to attribute to the same cause the elongation of the thigh observed in that form of disease to which Dr. Fricke has applied the term coxalgia? In the former cases, however, the muscles are found to be evidently tenser and harder to the touch, in the latter, laxer and softer.

Weber's experiment has proved that atmospheric pressure is in itself sufficient to prevent the sinking of the head of the bone out of the acetabulum, when the limb hangs at rest; but would it, even were its power much more considerable, prevent the head of the bone from slipping out in violent motions, as for instance, in forcible divarication of the lower extremities, which some men can perform to such a degree without consequent luxation, that the outstretched axes of the lower extremities fall in a straight line and form an angle open superiorly? Here the muscles must certainly co-operate in a very remarkable manner, sometimes one portion, sometimes another, acting more powerfully according to the necessities of the case.

It is well known that travellers on very lofty mountains suffer many and obvious inconveniences from the diminution of atmospheric pressure, but I do not recollect that relaxation of the coxo-femoral articulation has been classed among them. It is true, a sense of fatigue has been very frequently noticed, but this in general is speedily removed by a short repose, and can scarcely be attributed to any peculiar relaxation of the hip-joint. Yet Saussure's barometer did not stand higher than sixteen Paris inches on the summit of Mont Blanc, and on Chimborazo, at a height of 6001 meters, Boussingault's stood no higher than 13 inches 8½ lines.

As to the ligaments, they are, with reference to this connexion, of much less importance. Still, in our experiments, we found that after boring through the acetabulum, not more than two thirds of the head of the thigh bone descended from the socket, as long as the capsular ligament remained entire; but when this was divided, the ligamentum teres opposed no further obstacle to the descent of the head of the bone, only, however, when this was effected by the weight of the limb itself, or (when the body lay horizontally) by traction acting downwards and pretty much in the direction of the axis of the acetabulum. But, if we attempt to make the head of the bone slip out of its cavity by forcible abduction, as occurs in cases of luxation from violence, the ligamentum teres certainly offers some opposition, and a complete removal of the head of the bone from the socket is effected only by employing a force capable of rupturing the round ligament.

If we turn to the use which Weber has made of his discovery in explaining spontaneous dislocation, we learn from him in the next place, that, occasionally, in men otherwise healthy, the head of the bone suddenly sinks out of the acetabulum. As far as I can recollect, no observation of this kind has been hitherto made. He says further, "Since the head of the bone is not, as far as we have seen, retained in the acetabulum by the power of the ligaments, we should not, in

attempting to explain the origin of this affection, assume that the ligaments must be elongated or generally changed, before the head of the bone can quit the acetabulum. We have seen that this has occurred when air has got into the cavity of the joint above the head of the bone. But it is not necessary that the substance which gets in should be air. It may be a fluid secreted into the joint by the blood-vessels or it may be a solid substance growing within it. In proportion to the increase of the fluid or other substance formed there, the head of the bone sinks by its own gravity, without being necessarily forced down, and without any resistance being offered on the part of the ligaments."

It is certainly true, that the head of the thigh bone may sink to a certain extent out of the acetabulum without any preceding change in the ligaments; but before this happens completely, and in such a manner as to give rise to actual spontaneous luxation, they must certainly have suffered some alteration. It likewise cannot be denied, that a fluid situated in the cavity of the acetabulum above the head of the bone, or a solid substance formed in the same situation, may give rise to a dislocation of the same kind; but abstractedly from that point, that this occurs only in the rarest cases of spontaneous luxation, the bone does not sink out of the acetabulum during this process by its own weight, but is actually forced out. It is true that a few drachms of fluid are not sufficient to overcome the force of atmospheric pressure; but a fluid of this description is incompressible, and where it is, the head of the bone cannot be, and even the greatest degree of force capable of being exercised by the muscles is insufficient to retain it in the cavity. Weber himself says the same thing in an indirect way, and therefore involves himself in a contradiction; for he says, "the sinking of the head of the bone is in proportion to the increase in the quantity of the fluid." This case is of course quite different with air which has forced its way through a hole in the acetabulum; for this is in connexion with the whole atmosphere, and therefore presses the head of the bone downwards with the same power as it presses upwards by the operation of the same medium, so that the limb can now obey the impulse of its own gravity.

The experiments in question, according to my opinion, afford the following anatomical, physiological, and pathological results:

1. The head of the thigh bone completely fills the acetabulum, and the opposed surfaces are adapted to each other.

2. The pressure of the surrounding atmosphere is to be classed among the means by which the lower extremity is kept in apposition with the trunk of the body.

3. A spontaneous sinking of the head of the thigh bone out of the acetabulum may occur under certain circumstances without any preceding change in the ligaments.—*B. & F. Med. Rev.* July, 1837, from *Zeitschrift für die Gesamte Medicin.* B. II. H. III.

PATHOLOGICAL ANATOMY AND GENERAL PATHOLOGY.

13. *Microscopic crystals in the urine evacuations of persons labouring under typhoid fevers.*—In our No. for May last we noticed the discovery by Dr. Schönlein of micro-copic crystals in the alvine evacuations of persons labouring under abdominal typhus, and also the observations of Prof. Muller on the same subject. Subsequent investigations by M. Græge, furnish the following results.

The stercoraceous crystals exist in a healthy as well as in a morbid state. The feces of persons in health, examined immediately after expulsion, present a number of very minute, but distinct, and sometimes perfectly transparent crystals. Their diameter is much less than in typhoid fever. To see them, a magnifying power of 250 diameters is required, *their length only varying de $\frac{2}{3}$ centième de millimètre.* They are grouped together in large numbers, and their form of crystallization is very various. It is premature to form any theory about these facts.

The matter contained in the lower end of the intestinal canal of a living frog, when submitted to the microscope, is found to be full of crystals, while that in the upper portion contains none; yet in twenty-four hours, or in less time, after its death, crystals are found through the whole extent of the digestive canal. The bile has probably a good deal to do with the formation of these crystals. After

death that fluid usually contains crystals in great numbers; it also contains very regular filaments, which unite in great numbers, so as to form small bands, which are always found unaltered in the alvine dejections.—*Gazette Médical de Paris*.

14. *Spontaneous Rupture of the Heart*.—DR. MAYER relates in his *Med. Pract. Abhandl.*, the following interesting example of this rare accident. As a peasant was employed with several labourers in landing timber from a raft, a rope broke, and one of the beams fell back with such violence on the float, that the peasant, without being touched by the beam, fell from the shock into the water, and although he was taken out immediately, expired after a few gasps.—*Autopsy*. The cavity of the chest contained at least five pounds of dark fluid blood, which had gushed from a rent in the pericardium, near the point where the aorta escapes. The pericardium was distended with a similar fluid. On closer examination, complete rupture of the heart was discovered, dividing it into halves, a right upper and smaller, and a left, inferior, and larger half, only connected by an isthmus an inch in diameter. The substance of the heart, with the exception of a slight thinning of the walls of the right ventricle, was perfectly healthy, and not a trace of aneurismatic enlargement was discovered in the vessels.—*B. Ann. Med.* from KLEINERT'S *Report*, Dec. 1836.

15. *On the nature of Mucus, and discharges from the Urino-genital organs*.—M. AL. DONNÉ has lately published an account of some interesting microscopic researches as to the nature of mucus and the different discharges from the urino-genital organs. He has been led by them to the following conclusions:—

1. The pus of urethral gonorrhœa appears to be the same both in men and in women; it is alkaline, and presents the appearances of common phlegmonous pus. It contains no animalcules.

2. The pus from chancres of the glans and of the vulva is alkaline. Its globules are less clear than those of other pus. It is also alone capable of producing true pustules and chancre by inoculation.

3. The sebaceous secretion of the prepuce is alkaline. No animalcules are developed in the pus formed by the application of a blister to the glans of a non-syphilitic patient.

4. The pus of buboes is alkaline, and never contains animalcules.

5. The mucus of the vagina is in its healthy state acid, and composed of pellicles of a peculiar form. It never contains animalcules unless in an unhealthy state.

6. The discharges from the vagina are either simply mucous or are purulent.

7. Mucous discharge constitutes *vaginitis*, or vaginal leucorrhœa. It never contains any animalcules.

8. Purulent discharge constitutes vaginal gonorrhœa: in it are found the new animalcules which M. Donné has described under the name of *Tricomonas vaginalis*.

9. The acidity of the vaginal mucus, and the presence of animalcules in it, perhaps contribute to diseases of the neck of the uterus.

10. Uterine mucus is always alkaline, which distinguishes it from that of the vagina. In its healthy state it is not opaque and presents no globules: in affections of the neck or body of the uterus it becomes muco-purulent, but never produces animalcules.

11. Balsam of copaiba and cubebs, mixed with butter or chocolate, may be administered with advantage in gonorrhœa, in the form of solid cones introduced into the rectum.

MATERIA MEDICA AND GENERAL THERAPEUTICS.

16. *Physiological and Therapeutical properties of pure Tannin*.—M. CAVARRA having previously ascertained by experiments on dogs, that pure tannin possesses no poisonous qualities, took himself three pills, each containing two and a half grains, for three successive days. Obstinate constipation was the consequence which lasted for eight days, and was only then relieved by the administration of

two drops of croton oil. An exactly similar effect was produced on two other healthy individuals, who took the tannin in the same dose.

It now remained to determine, if possible, in what way tannin produces so powerful an effect on the mucous membrane of the intestinal canal. A dog, in which the maximum of constipation had been attained by giving large doses of tannin, was killed. The intestinal mucous membrane was found to be dry. The faecal matter was extremely hard, and, as it were, adherent to the sides of the colon. On examining the surface of the mucous membrane of that organ with a strong magnifier, the villousities and their pores were found considerably contracted. From these, and several other experiments, the author concludes, that tannin acts chemically on the intestinal mucous surface, in the same way that it acts on the skin of an animal, and produces constipation by the restriction which it causes in the secreting parts or tissues.

The superiority of pure tannin over such substances as contain it in greater or less quantity, (*unc. gall.*, &c.) is incontestible. Its relative power is much superior, but experience alone could decide whether pure tannin possessed any medicinal properties or not. The first experiment which the author made, was on a lady who was affected with diarrhœa, of an obstinate nature, for sixteen months. Every kind of treatment, including astringents, had been tried, without success. After the administration of five pills, each containing a quarter of a grain, the diarrhœa completely disappeared, and, in addition, the lady found herself cured of a leucorrhœa, with which she had been affected for the last eighteen years. It is now a year since this lady has been cured, and she continues to enjoy perfect health.

This first experiment proves that tannin acts not only on the mucous membrane with which it is in contact, but also exercises a marked influence on all the mucous membranes of the body. Other cases soon confirmed this conclusion. Thus, a young woman, who was affected with chronic pulmonary catarrh, was cured with six grains, administered in the dose of a quarter of a grain per day. It would be impossible to give an account here of all the cases of diarrhœa, catarrh, &c., which have been cured under the hands of the author by the use of tannin. We shall, therefore, content ourselves by simply transcribing the conclusions to which the experiments of M. Cavarra, with this new medicinal agent, have conducted him.

1st, That pure tannin, by producing a degree of impermeability of the mucous membrane, and also by its action on the nervous system, cures diarrhœa, leucorrhœa, and chronic catarrh.

2nd, That its efficacy in hæmoptysis, uterine hæmorrhage, and gonorrhœa, is also well demonstrated. The author reports having cured two old claps, one dating fifteen, the other twenty years.

Tannin may be given in the form of pill, or lavement, or as a draught, and in the dose of from a quarter to two grains, without producing any unpleasant constipation, but its effects must be observed with a little care.—*Bulletin Gén. de Therap.*, March 30, 1837.

17. *Tartar Emetic*.—DRS. CRICHTON and MAYER, observed an extraordinary effect of tartar emetic in a girl, aged 14, who had taken ten grains within a fortnight. Some days after this remedy had been discontinued, a pustular eruption appeared, exceedingly like the exanthem breaking out after the external application of tartarized antimony. In three individuals who, during their complaints, had had a strong tartar emetic ointment rubbed on the abdomen, small pocklike pustules were found on the internal surface of the peritoneum after death.—*Brit. Ann. Med.* from *Medico Pract. Abhand.* B. 1.

18. *Phlorizine*.—M. de KONICK has discovered a new medicine to which he has given the above name. It is an extract from the bark of the apple tree, and is obtained in the following manner:—Place the fresh bark of the roots of apple trees in a pipkin, covered with water, and leave it to simmer for five hours; then strain, and put the same quantity of water again on the bark; simmer an hour or two; then strain while hot, and leave it in different vessels for 36 hours; a great quantity of phlorizine will then be found at the bottom, and on the sides of the vessel there is a sort of granite, more or less dark. Collect and dissolve it, and let

it crystallize several times; it will then be quite purified. Or, pour weak spirits of wine over fresh bark; expose to the air for eight hours, in a temperature of 60 deg. This operation is to be performed once or twice, the liquor is mixed and distilled, and thus the greatest part of the alcohol is retained. Leave the drugs to cool, and on the next day there is much phlorizine, crystallized, as in the first process, but much clearer. At the hospital in Brussels, from 10 to 14 grains, with a drachm of sugar, in one dose, given for intermittent fever, produced the most marked success where quinine had failed.—*Continental and Brit. Rev.*

19. *Parsley juice as a substitute for quinine.*—Dr. POTT has long employed parsley juice in intermittent fevers, as a substitute for quinine. The juice is extracted thus:—Chop and then pound a handful of fresh parsley, pour an ounce of water over it; pound it again; pour the whole on a wet linen rag, and then wring out the sap over a vessel. Three ounces to be taken at two different times, a few hours before the fever comes on. Intermittents not cured by quinine have been completely so by this remedy. It has been prescribed in various other diseases, and although nearly erased from the pharmacopœia. Dr. Pott's observations may perhaps restore it to favour.—*Ibid.*

SPECIAL PATHOLOGY AND SPECIAL THERAPEUTICS.

20. *Enlargement of the Thyroid Gland.* It would appear from recent investigations that the sudden paroxysms of suffocation, sometimes terminating fatally, which occasionally attack infants, are caused by enlargement of the Thyroid Gland. In addition to the cases adduced by Dr. Montgomery, Hirsch, Kopp, Roesch and of our correspondent Dr. Roberts of New York (see our three preceding No.'s) we find in the *Berlin Med. Zeit.* (No.'s 47 and 48) two cases related by Dr. MALIN, and in the *Lancet* of 20th of May, 1837, a third by Mr. WM. HUGHES, all confirmative of the pathological view to which we have alluded. The first case described by Dr. Malin occurred in a child seven months of age. The infant enjoyed good health, but the nurse remarked that it frequently screamed acutely, without having any apparent cause of suffering. In a short time the infant was seized with fits of suffocation, coming on at irregular intervals, without any determinate exciting cause, and during which respiration seemed to be entirely suspended. The fit commenced with some quick interrupted efforts at respiration; the face then became of a dark red hue. Soon afterwards the respiration was entirely suspended, and the child lay without pulse, and excessively cold, for one or two minutes, when the paroxysm terminated by a very characteristic cry. The various remedies which were employed were attended with no benefit whatever: the paroxysms returned with increased frequency, and the child fell a victim to the intensity of the disease, about three weeks after its first appearance.

On examining the body, Dr. Malin found the thymus gland so excessively enlarged that it filled the whole of the anterior mediastinum: its colour was pale red, and it resembled the liver in structure. The upper edge was in contact with the thyroid gland, while the posterior one, of a pointed shape, was closely attached by cellular substance to the arch of the aorta. The inferior part of the thymus gland covered the whole of the apex of the heart, prevented its pulsation against the ribs, and hence rendered it almost impossible to hear the beating of the heart during the last few weeks of the patient's life. It weighed 7 drachms, 10 grains, and had pushed back the lungs against the posterior wall of the chest. When cut into, and submitted to strong pressure, a small quantity of a milky-looking slime was discharged. The substance of the heart, and especially the left ventricle, seemed very soft. With this exception, nothing abnormal was observed in the cavity of the heart.

The second case was a girl four years of age who had suffered for several months under an attack of whooping-cough, from which, however, she recovered without any medical assistance. Since then the child was subject to paroxysms and difficulty of breathing, coming on suddenly during the night, and compelling the little patient, whose countenance assumed a bluish tint, to assume an upright

posture in bed. In the month of January the fits of suffocation became more intense, and the child was carried off by a violent paroxysm while the parents were absent in search of medical assistance. On examining the body, the thymus gland was found enlarged to at least three times its normal volume; the structure of the gland, however, appeared to be normal. Nearly all the bronchial glands were enlarged, and tuberculous. One of them, placed near the bifurcation of the trachea, was as large as a hen's egg, extremely hard, and converted into tubercular matter. Both bronchial tubes were so compressed by the tumour, that only about one-third of the calibre of each remained free; yet the child did not suffer constantly under a difficulty of breathing, and the sibilus in the chest was only heard from time to time. The lungs and heart contained a quantity of dark blood. The former were filled with the tubercles in a crude state.

The subject of Mr. Hughes' case was a child eight months of age, afflicted with whooping cough. This infant was frequently seized without premonition with alarming fits of suffocation, which however lasted only a few minutes. Whilst improving in health, the whooping cough having considerably abated, and without any previous appearance of indisposition, one of these attacks occurred and in a few minutes the child was a corpse. On examination, the only deviation from health found was an enlargement of the thymus gland which filled the whole of the anterior mediastinum, and pressed upon the bronchial tubes; the inferior portion of the gland covered the apex of the heart and was firmly adherent to the pericardium, which contained more fluid than natural. The gland weighed eight drachms and five grains, but the structure was natural.

21. *Decoction of Sarsaparilla and Nitric Acid, in certain cases of Chronic Cough.*—The utility of the decoction of sarsaparilla and nitric acid, has been long recognised in cachectic states of the system, and affections of the skin, whether syphilitic or mercurial; and it has also proved itself very efficacious in various species of sore throat, chronic pains, and other textural derangements of a slow and tedious character. The marked effects which the above combination produces in these diseases of the general habit, skin, and mucous membrane of the throat, has led Prof. GRAVES of Dublin, to infer that it might be employed with advantage, in cases of chronic cough, attended with redness and relaxation of the mucous membrane of the fauces, elongation of the uvula, and some degree of general debility. "I have observed," he states, "that such cases are almost invariably accompanied by more or less derangement of the digestive organs and an irritable state of the general system; and from their analogy to other states of the constitution, in which nitric acid and sarsaparilla have proved extremely beneficial, I was induced to give this combination a trial; and I can now state that it has not disappointed my expectations. Decoction of sarsaparilla, given in doses of a pint daily, with a drachm or more of nitric acid, has proved a most useful and valuable remedy in the treatment of cases of this description. It is scarcely necessary to observe, that in addition to the use of this remedy, change of air, moderate exercise and recreation, and a nutritious, but not heating diet, are required. In some of these cases it will be also necessary to apply lotions of the nitrate of silver or sulphate of copper to the fauces and tonsils; and where the uvula is greatly relaxed, it will require to be frequently touched with the nitrate of silver, or even to be shortened by an operation. Guided by the same principles, I have frequently exhibited decoction of sarsaparilla with nitric acid in cases of persons of a reduced and relaxed habit who are troubled with a slight but frequently recurring cough or hem, and the expectoration of a few bronchial sputa, occasionally mixed with blood, which appears to come, not from the lungs, but from the eroded mucous membrane at the top of the pharynx and larynx. In such cases I have observed that the cough and expectoration took place chiefly in the morning after awaking, and in some had continued for weeks without any dyspnoea, pain in the chest, or fever. I may also remark, that the same combination may be often given with advantage to patients whose months have been recently made sore by mercury administered for the cure of bronchitis or pneumonia, and will occasionally be found useful in removing the still lingering remnant of pulmonary disease, at a time when mercury could not be pushed farther with safety.—*Clinical Lectures.*

22. *Tartar Emetic and opium in the delirium of Typhus*.—Dr. HUDSON in an interesting article in the *Dublin Journal* for July last, on the use of certain remedies in typhus fever and its complications, states that he has tried Dr. Graves's mode of giving opium, viz: in combination with tartar emetic, (see this Journal for May, 1836, p. 221,) for the relief of the delirium of typhus, in six cases. In one, a case of furious delirium, this treatment as well as every other failed: in the others, and in numerous cases since the period comprised in his report, he says that it has succeeded admirably. It seems, he adds, best adapted to that restless kind of delirium resembling delirium tremens, in which the patient cannot be restrained from attempting to leave his bed, and walk about the ward; when every muscle is tremulous, the eye red from want of sleep, the tongue dry, and the patient presenting that kind of spurious excitement, which might induce the attendant (injudiciously no doubt) to order the local abstraction of blood, by leeching the temples, or opening the temporal artery. In prescribing this medicine, Dr. Hudson thinks it advisable to use caution in two ways: 1st. Not to give it *after* it has produced sleep. 2nd. To follow it up by the prompt and frequent exhibition of wine, and such nourishment or cordials as the more or less advanced stage of the disease, and debility of the patient, may require; as it seems to him that there is increased risk of the patient sinking, unless timely supported after sleep thus induced.

23. *Castor oil Frictions in Gout*.—A writer in the *Lancet* (April 8, 1837,) extols the external application of castor oil, as one of the best and most effective remedies in the treatment of *Podagra*. The method of applying it, is, by rubbing the castor oil, at bed time, into the affected limb, and then immediately wrapping it up in warm flannels. It is said to act like a charm, and to have cured some of the worst forms of gout after every other treatment had failed.

24. *On the indications for the use of Chlorine and Muriatic Acid Vapours, in Diseases of the Air Passages and Lungs*.—In the years 1829, 1830, and 1831, Professor ALBERS of Bonn, instituted a series of clinical experiments, in the Medical Hospital at Bonn, on the effects of chlorine vapours in phthisis, chronic bronchitis, and chronic pneumonia; these experiments were repeated in his private practice, during the years 1832 and 1833. The chlorine vapour was applied in the manner recommended by Murray; or instead of exposing the patient to vapour strongly impregnated with chlorine, for the space of a few minutes at different times in the day, he was kept the whole day in a chamber filled with very weak chlorine vapour. The vapour was produced by boiling chloride of lime, and then heating it in a large dish, or by sprinkling it with muriatic acid; sometimes it was generated by pouring sulphuric acid on culinary salt.

The following are the conclusions deduced by Professor Albers, from the results of his experience in numerous cases:—

1. Chlorine acts as a stimulant, but when the remedy gets into the blood, its effects are antiphlogistic. It produces a tickling sensation in the eyes, nostrils, and throat, and sense of roughness and constriction in the chest. If the throat of an individual who has been exposed for a long time to the vapour of chlorine be examined, it will generally be found of a deeper red than natural. These and other facts are sufficient to prove that chlorine vapour operates as a local stimulant. It is on this account more remarkable that chlorine when it gets into the blood, exercises an influence of a directly opposite nature. It diminishes the frequency of the pulse, calms excitement, and produces effects which may be termed antiphlogistic. This difference of effect, however, before and after the remedy gets into the blood, is not peculiar to chlorine; it is common to many remedies of an antiphlogistic character, and is observed in nitre, tartar emetic, and many of the neutral salts. When there is no hæmoptysis or violent local irritation present, chlorine inhalations may be used in diseases of the lungs and air passages; its stimulant effect gradually diminishes, and after some time the mucous surfaces of the lung become less sensible to its exciting influence.

2. In tubercles of the lungs, in chronic catarrh, in chronic inflammation and ulceration of the bronchial mucous membrane, and in dilatation of the bronchi, chlorine vapour is of no service, and in most cases will not be borne, in consequence of the irritation it produces. On the other hand, it has a very salutary

operation in pure ulceration of the lungs or vomica. This state, however, is not to be confounded with suppurating pneumonia, to which the use of chlorine vapour is not so applicable. How far patients labouring under disease of the lungs may be adapted for using this remedy cannot be determined; much will depend on general irritability and individual disposition, and the chlorine vapour should be always tried experimentally at first.

3. From the foregoing observations it appears, that chlorine vapour produces salutary effects in chronic ulcers of the lungs; this agrees with the results obtained in surgical practice from treating old ulcers with the solutions of chloride of soda and chloride of lime.—*B. & F. Med. Rev.* from *Hannoversche Annalen*, 1836.

25. *Nymphomania before puberty.*—The following extremely curious case of a child scarcely 12 years of age, affected with nymphomania, was related by M. MAGENDIE, in his recent course of lectures on the physiology of the nervous system. The subject of this case “abandoned herself to the practice of masturbation, of which she was guilty several times in the course of the day, and that in the most open and undisguised manner. This child, of gentle and engaging disposition, and endowed with a considerable share of intelligence, was so powerfully influenced by the fatal passion which dominated, while it undermined her existence, that she at length became an object of horror to her parents and friends, to whom she frequently detailed in the morning, and with the utmost frankness, the excesses committed during an agitated and imperfect sleep. This child was brought to the *Hôtel Dieu*, where she soon died with all the symptoms of compression of the brain. Immediately on her arrival I ordered her to take some cold baths, hoping to calm the nervous system, and diminish the irritation of the genital organs. One or two baths only were administered when the little patient was seized with a species of hallucination, and an exaltation of the intellectual faculties, manifesting itself by an incessant loquacity. At the following visit the child answered rationally enough all the questions which were addressed to her, and I was unable to discover any of the symptoms which ordinarily accompany acute inflammation of the brain or of its membranes. I ordered sinapisms to the feet. On the following day, however, I found the child labouring under the symptoms of compression of the brain, which gradually became more profound, and finally terminated in coma and death.

“The *autopsy* was commenced 48 hours after death, and it required but a very superficial examination to show how closely connected the nervous system was with the disordered phenomena, in the midst of which the patient’s life terminated. The first thing done was to expose the anterior surface of the spinal marrow, and collect with care the cerebro spinal fluid; the quantity of this latter obtained, amounted to about two or three drachms, which you see here. Instead of being clear and transparent, as it should be, and as you have seen it when extracted from a healthy animal, the fluid resembles an exhalation of serum, and is of a dull yellowish colour. You know, from what has been already said at an early part of the course, how profoundly the functions are deranged by any remarkable modification of the cephalo rachidian fluid, which is sometimes found not only altered in colour, but more or less deviating from its normal degree of fluidity. Here, then, the alteration in the colour of the cerebro-spinal fluid puts us on the trace of the cause of this child’s death, which evidently must be the same that produced the alteration of the fluid; and this leads us to examine the state of the cerebro-spinal axis itself, and of the membranes enveloping it. But first let us determine the condition of the fluid in the various parts of the cranium and vertebral canal.

[Here M. MAGENDIE directed the attention of the pupils to a layer of puriform liquid, mixed with albuminous flocculi, which extended over the whole surface of the spinal marrow, and was contained between the arachnoid and pia mater.]

“When I remove (continued the Professor) the fibrous membrane, you may observe how the arachnoid is elevated at several points by the effusion of fluid beneath it; the brilliancy and smoothness of the surface sufficiently indicate that the effused matter lies beneath the arachnoid, and, consequently, occupies the seat of the cerebro-spinal fluid. Most physicians would regard the pathological changes now before us as simply an effect of arachnitis, but for my part I see an alteration, a degeneration, of the cerebro-spinal fluid, produced by some special lesion of the

pia mater; the disease probably commenced by an obstacle to the venous circulation in that membrane, which was soon followed by alterations of its normal secretion, and consequent derangement of the functions of the whole nervous system.

"A physician, who has devoted a good deal of attention to diseases of the brain as connected with mental derangement, lately published a memoir on the false membranes which, according to him, are formed between the two free surfaces of the arachnoid, or, in other words, within the great cavity of that membrane. This is in opposition to what you have just seen in the case before us, but I do not hesitate to say, that the author of the memoir alluded to has fallen into an error; he has mistaken, altogether, the seat of these false membranes, which, like purulent effusion, transudation of serum, &c., almost invariably exist in the subarachnoid cavity, *i. e.* between the arachnoid and pia mater. Indeed, many writers, and especially the older ones, fall into the same error, which depends on want of attention, more than anything else, on the part of those who make autopsies; however, it must be confessed that in some cases it is difficult to determine the precise seat of the lesion, or the nature of the change which the fluid has undergone. I regard these false membranes, for the most part, as depending on a change in the consistency of the cerebro-spinal fluid, and so far we advance a step beyond modern pathologists: inflammation is their resource, but it is frequently insufficient to explain the cause of death; while, on the contrary, I have demonstrated, by a series of experiments which you have all witnessed, that any notable alteration in the physical properties of the cerebro-spinal fluid is followed by a profound disturbance of the functions of the nervous system, and generally terminates in death.

"Look now at the state of the pia mater, and observe how the injected vessels form a net-work distinguishable underneath the arachnoid, for let me impress you with the idea that in all these cases the alteration occupies the subarachnoid cavity, and not the free, smooth surface of that membrane. I have now exposed, in all directions, the great cavity of the arachnoid, and you see that it contains a quantity of purulent-looking matter: this, however, is not produced by the serous surface of the arachnoid; the latter is a tissue enjoying a very high degree of permeability, and the effused fluid you see here has made its way by imbibition from the cellular membrane lining the cerebral anfractuosités. The osseous envelop of the brain does not present any particularity worthy of notice; however, the cavity on the left side seems somewhat more developed than that of the right side. The region of the cerebellum is but moderately developed, a fact which is in contradiction of the doctrine of Gall, who placed, as you know, the seat of amateness in that organ; now, the present subject, affected with this passion or instinct in a very high degree, should have presented a corresponding development in that part of the nervous system in which Gall supposed the instinct to reside. The only remarkable circumstance connected with this portion of the head, is the excessive thickness of the skull where it covers the cerebellum. I am far from wishing to deny the possibility of any relation existing between the cerebellum and generative system; but, on the other hand, I cannot prevent myself from thinking that such relation is anything but constant when I find in so many cases high irritation of the genital apparatus coinciding with atrophy or more or less destruction of the cerebellum. The back part of the brain, then, is, as I said, but slightly developed in the present case: on the contrary, the whole mass of the cerebrum presents a greater volume than we usually find at this age. The same purulent effusion, already noticed, may be observed on the superior and inferior surfaces of the cerebellum; the cerebral pulp itself is of good consistency, and much injected with blood; it is probable that we shall find more or less effusion of serum in the lateral ventricles. I have now exposed the central parts of the cerebrum: the ventricles contain some clear fluid, but in small quantity.

"Let us now direct our attention to the state of the genital organs. The external parts are red and injected; on separating the external labia the hymen appears in a state of perfect integrity, a circumstance which is excessively curious when we remember the practices to which this child constantly abandoned herself. The clitoris is very small, scarcely developed; it does not present anything worthy of notice; the vagina appears normal, without any marks of irritation, injection, &c. On arriving at the uterus we find that instead of being developed

it is actually smaller in dimensions than the organ usually is at the age of 15. The neck of the uterus does not present the least prominence. The only parts of the reproductive system which exhibit any deviation from the normal state are the ovaries. Those bodies are much more developed than they should be; and, what is very remarkable, some of the vessels of Graeff can be distinguished with the utmost facility; here is one that is highly developed. You know that these vesicles are considered as a proof that puberty has arrived, but this child was far from affording external signs of puberty. The conformation of the bladder and rectum presents nothing extraordinary.

"Here we may stop for a moment to ask ourselves, did the existence of the nymphomania depend on the development of the ovaries, or the presence of the vesicles just alluded to? This terrible disease has occupied the attention of several writers, who have put forward a variety of theories; and, in fact, what is more easily made than a theory, provided you are not asked to furnish proofs of what is advanced: thus some authors place the seat of nymphomania in the uterus, others in the clitoris, others again in the ovaries; finally, others place it in the cerebellum. For my own part, without presuming to decide a question which is still involved in obscurity, I am inclined to connect the nymphomania of the present case with an abnormal development of the ovaries, and with the presence of vesicles in those bodies. However, nothing certain can be concluded from a single case; if I have occupied so much of your time with its details, it is with the hope that at some future time it may serve to throw light on a disputed question in physiology."—*Lancet*, June 24, 1837.

26. *Case in which the functions of hearing, speech and taste, but not of smell, were destroyed by the "wind of a ball."*—Professor MAGENDIE, in the lecture from which we have just given an extract, exhibited a Pole who had been knocked down by what is vulgarly called "the wind" of a cannon-ball, during one of the numerous combats in which he was engaged for the independence of his native land. The ball which affected him killed two of his friends at his side. The young soldier rose up from the field immediately after the accident; at first he thought nothing was the matter, but in a few seconds he perceived that he was completely deaf, and unable to hear the musket shots fired along side of him. The power of vision was troubled only for a short time, but he had entirely lost the faculty of speech, and that of taste; yet, strange enough, the sense of smell remained intact. The lesions just described have continued with little modification up to the arrival of the young soldier at Paris. I have just made an experiment which demonstrates that the special sensibility of the palate and tongue no longer exist: I placed some mustard on the anterior part of the tongue, but the patient remained unconscious of its presence until the mustard descended as far back as the pharynx and top of the œsophagus. The sensibility of the integuments of the head and face is limited on either side by the sterno-cleido-mastoid muscles. The muscles which act during deglutition, enjoy their full force; hence we cannot admit any affection of the glossopharyngeal nerve. The paralyzed state of the tongue, the impossibility of communicating to it any motion from behind forwards, demonstrates a loss of power in the genioglossal muscles, and hence the ninth pair of nerves also participates in the lesion. By analyzing, then, the symptoms under which this unfortunate young man suffers, we arrive at the diagnostic of a lesion of the fifth pair of nerves, giving rise to all the phenomena connected with loss of sensibility; moreover the eighth pair is paralyzed on both sides, together with a portion of the ninth pair.

"Here we have a practical illustration of the utility of experimental physiology. A correct knowledge of the connexion existing between functions and organs, leads at once to a knowledge at least of the seat of disease, if not of its nature. In the present case the lesion occupies the three nerves just mentioned, and it is to them that a rational method of treatment must be addressed. I commenced by trying the galvano-puncture; I introduced a platina-needle through some of the filaments of the supraorbital nerve, and a second into the superior maxillary branch of the fifth, but this produced such strong convulsive movements of the eye-ball, that I was forced to desist. I shall, however, repeat the trial again. The same means also determined convulsive movements in the muscles of the

face and tongue, but without any permanent benefit; the latter organ still lies motionless in the interior of the mouth.

"We are now inclined to ask, what portion of the central nervous system is more immediately affected? for we cannot suppose that the same accident injured separately the fifth, eighth, and ninth nerves: the lesion evidently occupies the cerebro spinal axis, and, we have every reason for thinking, that part of the medulla oblongata and pores from which the nerves mentioned above, arise. The cannon-ball probably passed obliquely along the back of the head and neck, without injuring the integuments, but merely producing one of those concussions which are frequently mentioned in the annals of military surgery. I propose continuing the use of galvanism, and when the patient returns, in fifteen or twenty days, I trust we shall have a more favourable account to give of him.

"Time will not permit me to enter into any details on this curious case, from which, however, you are now sufficiently advanced to draw some conclusions for yourselves. I shall therefore terminate the lecture by reminding you, how absolutely necessary it is for the physician to possess correct anatomical and physiological ideas, if he aim at understanding the various lesions which the nervous system may present to him, and is desirous of really advancing the science of medicine, instead of building up theories which never can produce, as they never have produced, any solid advantage."—*ib.*

27. *Gelatinous softening of the stomach in children.* The fourth No. of the first vol. of the *Zeitschrift für die gesammte Medicin*, contains an interesting article on this affection by Dr. AUG. DROSTE of O-nabrück. In adults softening and perforation of the stomach have been observed as consequences of abscess, of cancer, of gangrene, and other affections; but the species now alluded to, seems peculiar to children, and unattended as it is with symptoms of inflammation, appears to constitute a disease "*sui generis*."

Amongst the causes, those which seem to have the most direct influence in the production of softening of the stomach in children, are, the first dentition, weaning, and artificial feeding. The complaint, at all events, is principally limited to the two first years of infancy. Thus Romberg assures us, that, in fifty cases, he saw only six between two and five years of age. Unfortunately our knowledge of the immediate causes is still more obscure. Romberg considers it to depend on a want of harmony (or balance) between the secretions of saliva and gastric juice, and proposes, in cases where spoon feeding is necessary, to employ a peculiar sucking apparatus, because the action of sucking is a specific excitement to the secretion of saliva.

The ideas of John Hunter on gelatinous softening of the stomach in adults, are not applicable to the present disease, for, in a great number of cases, we find other points of the alimentary canal softened, though they were evidently inaccessible to the gastric juice.

Camerer,* attributing the affection to disordered function of the nerves distributed to the stomach, performed a number of experiments on dogs, and obtained the most perfect specimens of softening, by dividing the pneumogastric and sympathetic nerves; hence he was induced to place the essence of this disease in inflammation of the eighth pair of nerves terminating in paralysis: in this way the nervous influence is totally suspended, and as the secretion of the gastric juice continues, it acts on the mucous membrane, as on an inert substance, unable to resist its solvent power.

However ingenious this explication may be, it is a mere hypothesis; for the different autopsies which have been made, have never shewn the pneumogastric nerves in a state of inflammation: the treatment founded on this view of the disease seems also, if not absolutely injurious, at least inefficient. On the contrary, the author speaks highly of the muriate of iron first employed by Pommer, in two cases, with the most decided effect.

The elder child, six months of age, took two scruples of this remedy, in seven days: the younger, only four weeks old, took 21 grains in eight days. The following formula was adopted by Pommer:—*R. Ferri muriat. 10 a 15 gr.; decoct.*

* *Researches into the Nature of Softening of the Stomach.* Stuttgart. 1828.

altheæ ʒij; syrup. altheæ ʒvj; gummi arab. ʒij. Two tea-spoonsful every hour. Both children recovered.

In two similar cases, Hergt gave the muriate of iron in conjunction with musk and extract of bark, and with equally fortunate results.

The following cases, reported by the author, supply additional testimony in favour of this remedy:—

A healthy, well-formed child, though of delicate constitution, somewhat more than nine months old, suddenly awaked from a sound sleep with acutescreams, and continued agitated and sleepless. Symptoms of acute fever now set in; the abdomen and head were very warm; and the child dozed with half-closed eyelids; the appetite was lost; severe thirst; constant nausea, but no vomiting; the body was covered with sweat; and exposure to light produced distress. These were soon joined by symptoms of a different nature; the expression of the countenance became altered and anxious; the face pale; the forehead covered with cold sweat; the mouth distorted, and the limbs convulsed. No apparent cause could be discovered which might explain accidents of so severe a nature. There was no trace of irritation of the gums; no excess in diet, &c., had been committed. However, as the child lay with its head constantly on the nurse's breast, cried out whenever it was moved, as the bowels were constipated, and the abdomen free from pain on pressure, fears of hydrocephalus were entertained. An antiphlogistic treatment (with the exception of bleeding) was employed, and calomel, in conjunction with the flores zinci administered internally.

On the 11th day of the disease, after several natural stools had been passed, the child evacuated a compact mass of fœtid slimy matter, about two inches long, and of the thickness of a raven's quill.

The child, hitherto without appetite, and reduced to a skeleton, now became voracious, and although the lightest nutriment was administered in very small portions, after each repast he became uneasy and cried. A cold sweat covered the face, and the contents of the stomach were rejected by vomiting. These symptoms, alternating with a weak cough, continued for three weeks without receiving any modification under the treatment employed, which consisted in the administration of gentle stimulating and strengthening remedies, warm baths, and aromatic fomentations to the stomach and abdomen.

Under these circumstances the author prescribed his favourite remedy. The child enjoyed some sleep that night, and was much more tranquil than he had been for some time back; the vomiting, also, gradually diminished. On the following day he took a tea-spoonful, every hour, of the following mixture:—℞. Tincture ferimuriat.; extract. cortic. chinæ, aa. ʒss.; aq. flor. aurant. ʒij; syrup. corum. ʒj.

Under this treatment, aided by diet, the administration of a mineral water for drink, &c., the anxiety, cough, and cold sweats, gradually disappeared. The little patient recovered its strength, and became a fat, healthy child.

28. *Scald Head*.—Sir FRANCIS SMITH, M. D., in an article in the *Dublin Journal* for May last, states that he considers Kreosote almost a specific in *Tinea Capitis*. He uses the remedy of the specific gravity 1.061, and nearly colourless.

29. *Ulcers on the septum narium*.—These ulcers often prove very intractable, as most practitioners have observed. We have found the nitrate of silver to succeed more frequently in curing them than any other application. Sir FRANCIS SMITH, M. D., has, however, succeeded in effecting a cure with kreosote in a case in which that remedy, the sulphate of copper, and iodine, had all failed. The subject of it was a lady, of scrofulous habit, in whom the ulcers had existed for some months, and had appeared towards the conclusion of a very copious catarrhal deluxion from the Schneiderian membrane. The ulcers amounted to four, varying in size from the head of a pin to the section of a very large pea; three on one side of the septum, and one (the largest, and the first which had made its appearance) on the other side. They possessed the peculiar characters which those ulcers generally assume; appearing to entirely sink through the lining membrane, and to rest upon the cartilage or bone; which, however, Dr. S. believes they rarely do, except in very advanced cases.

He at first made use of a wash, consisting of one part kreosote, with sixty of

water; in which proportions they unite at common temperatures; the wash to be snuffed up the nose frequently in the day. The odour was complained of as very disagreeable, and at the end of two days, he was disappointed by finding that no progress of improvement, in the appearance of the ulcers, had taken place. He now determined to apply the kreosote in its pure form, and began by pencilling the edges of the ulcers with a brush smeared with kreosote, and directing the patient to inhale the fumes of acetic acid for a few seconds subsequently. The application of the pencil was rendered easy by firmly grasping the ala nasi, and drawing it outwards; and he advised the inhalation of the fumes of acetic acid for two reasons: first, because acetic acid is the proper solvent of kreosote, and would, by being inhaled immediately after its application, have the effect of rendering its action more equable and uniform; and secondly, because the odour would tend to counteract the disagreeable fuliginous flavour of the kreosote. The next day he had the gratification to find the character of the ulcers improved; the edges were much less abrupt; and he then determined to apply the kreosote lightly over the whole of the ulcer on the left side of the septum, and to brush those on the right side with a solution of kreosote in twenty parts of acetic acid; and he continued to do so on alternate days for a week, at the end of which time, the ulcer on the left side of the septum was reduced to a mere point, having every appearance of immediately healing; whilst those on the right side, though improved in appearance, having smooth edges gently declining towards the centre, still preserved their original dimensions. He now applied to them also the pure kreosote, repeating the application on alternate days, accompanied with the inhalation of the fumes of acetic acid. The rapidity with which the ulcers now healed was truly wonderful. That on the left side, to which the kreosote in a pure state was first applied, was completely healed in ten days; and those on the right side, in six days after the first application of pure kreosote, and sixteen from commencement of treatment.

"From this case, it would appear, says Dr. S., that kreosote possesses the power of healing solutions of continuity in mucous membrane, and that with great rapidity, and in cases where all other treatment has proved unavailing. We also gather, that it is most to be relied upon, in its pure state, for the treatment of small breaches of continuity; although it possesses a decided action when dissolved in acetic acid, in the proportion of one part to twenty; but that the solution of one part in sixty of water, though preferable for use where the surface is large, was found quite useless in the instance before us.—*Dub. Journ.*, May 1837.

30. *Remedy for Ptyalism.*—KNOD and KLUGE assert that salivations, pains, swelling, and mercurial ulcerations are removed in the space of from four to six days by the following prescription: *R.* Iodini grs. v.; alcohol 5ij; solve et adde, aq.; cinnam. ʒiiss; syrup simp. ʒiiss. To be taken in the 24 hours in drachm doses.—*Gaz. des Hôp.*, July 18, 1837.

31. *Protiodide of Mercury in Psoriasis.*—M. POIRET recommends the following ointment to be rubbed in the morning and evening on the parts affected with the scaly eruption. *R.* hydrarg. protiodid. ʒj; axung. ʒj. The patient ought at the same time to take simple alkaline or vapour baths alternately.—*ib.* July 20.

SURGICAL PATHOLOGY AND OPERATIVE SURGERY.

32. *Introduction of air into the veins during operations.*—On the 4th of July, M. AMUSSAT communicated some observations to the Academy of Medicine of France on this subject, and detailed the method which he had found successful in preventing the fatal effects of its occurrence. He was operating, on the 1st of this month, on a woman aged 47, from whom a scirrhus affection of the right mammary gland, and subjacent and surrounding tissues, required to be removed. He had taken away all the right breast, and the adjacent parts implicated in the disease, and was tracing and cutting it away towards the opposite side, when suddenly, on making an incision into some suspected granulations on the inner side of, and below the left clavicle, he, and three other surgeons who were assisting him,

heard a sudden, distinct, interrupted sound, as of air passing into a cavity through a narrow opening. The patient immediately felt a sensation as of suffocation, and said she was dying. A second sound like the first, and following it at a brief interval, left the operator in no doubt of the nature of the accident, and he placed his finger on the spot from which the sound proceeded. The patient was more impressed with a sense of impending death than before; a cold sweat covered her face; her eyes were directed upwards; and all round her thought her dying. M. Amussat thought now of trying the effect of pressure on the chest to force out the air from the vein, whose orifice was uncovered. He accordingly compressed the whole chest very firmly several times, and then made an assistant press on the spot from which the sound had proceeded. After a few minutes the patient became much better, her anxiety diminished, and the operation being completed as soon as possible, a portion of the tissues around the situation of the open vein was tightly tied up with a ligature. The patient has gone on perfectly well since the operation, and there is every reason to anticipate her complete recovery.—*Gazette des Hôpitaux*, 6 July, 1837.

33. *Case of fall from a great height, with various injuries—followed by recovery.*—The following surprising case of fall the distance of 170 feet almost perpendicular, with recovery, is recorded by J. PATTERSON, Esq. in the *Edinburgh Med. and Surg. Journal* for January last. Private Thomas Gough, 42nd Royal Highlanders, aged 19½ years, on the 29th of August, whilst in a state of intoxication, attempted to escape from the castle of Edinburgh, in consequence of being refused leave to visit the city. For this purpose he chose the south side, and made his exit through a small embrasure overlooking the most precipitous and rugged face of the castle rock. His intention was, to jump upon a projecting ledge, from which he imagined he could scramble down the remaining part of the descent; but in doing so he broke his left leg; and in his own words, “stotted from rock to rock, till the road keppt him.” He fell the astonishing height of 170 feet almost perpendicular: and was found on the road immediately after his fall, quite insensible, and bleeding profusely.

He was instantly carried into the Castle, and on examination it was found he had received the following injuries; viz. three deep wounds on the head, in two of which the bone was exposed, and there was a fracture over the right frontal sinus;—the left clavicle was fractured about one inch from the sternal articulation;—the right wrist-joint was dislocated backwards, and both the radius and ulna of the same side were fractured;—there was an extensive bruised wound in the right ilium;—and the left tibia and fibula were fractured about two inches above the ancle-joint!

He was occasionally delirious for several days; but, with this exception, not a bad symptom appeared. He is now (2nd Oct.) nearly well, and there is every prospect of his resuming his military duties in a very short time.

Dec. 11.—The wrist-joint remained weak and enlarged for some time. He has now been discharged from the Hospital; and for a month has resumed all his duties as an efficient soldier.

34. *On excision of the smaller joints.*—By Dr. GERNET of Hamburg. Among the many improvements in modern surgery, the substitution of excision of diseased joints and of carious portion of bone for amputation of the limb, is not the least important. A considerable number of years have now elapsed since this principle was first applied to the treatment of caries of the larger joints, and, in a late number of the *Hamburg Journal*, we find Dr. Gernet, assistant surgeon of the Hamburg hospital, ably advocating its extension to the treatment of caries of several of the smaller joints. He reports seven cases, which were operated upon by Fricke, in the hospital. In four of these, the caries affected the bones of the hand, and, in the remaining three, those of the foot. Of the former number, the disease in three affected the metacarpal joint of the thumb, and was produced in one case by the point of an awl penetrating the joint; in the second, by the cut of an axe; and, in the third, it was ascribed by the patient to a wire, which, some months previously, he had drawn tightly round the thumb; but the chief cause seemed to lie in the cachectic state of the constitution. In the fourth case, the caries affected the metacarpal joint of the middle finger, and, as in one of the former instances, was caused by the wound of an awl.

In those cases in which the foot was the seat of the disease, the caries affected, in the first, the joint between the first and second phalanx of the great toe, and could not be ascribed to any evident cause; in the second, no caries existed, but a large exostosis, which was attached to the head of the first phalanx of the great toe, greatly incommoded the patient. In the third case, the caries affected the metatarsal joint of the great toe.

In all of these cases, the operation was performed by removing the extremities of both bones; and this was judged the more advisable proceeding, even in the case of exostosis, where no lesion of the opposite articular surface existed. The ends of the bone were then approximated as nearly as could be done without much difficulty or causing great uneasiness to the patient, and retained in this position by a peculiar apparatus. Union by the first intention was tried in two instances, but afterwards abandoned, and the wound was stuffed with charpie. Torsion was employed to arrest the hemorrhage from the mouths of bleeding vessels; a practice which seems to be followed in all operations in the Hamburg hospital.

It has been advanced against the operation of excision of the smaller joints, that the time required for the cure, and the length and pain of the operation, were more than equivalent for any advantage which could be derived from a shortened and ankylosed finger, and which perhaps would prove a worse than useless appendage to the patient. We shall therefore examine the results of the seven operations. Of the four cases in which the hand was affected, the success in three was complete. On an average, five and a half weeks were sufficient for the union of the wound and solidification of the bone; and all three were capable of returning to their work at the end of seven weeks. Two of them, in whom the metacarpal joint of the thumb had been affected, regained completely the use of the finger; and the other, the fourth case, was fast regaining the use of the finger when he left the hospital. In the third case, the wound healed slowly; but the patient was unable to use the thumb, and was dismissed at the end of three months, in rather an unsatisfactory state. Of the foot cases, the first was able to use the extremity at the end of five weeks; but, in the second, the cure was retarded by necrosis of a portion of bone till the end of the tenth week. Four weeks sufficed to effect the cure in the third.

In the first set of cases, the operation, including the time occupied in dressing the wound, lasted from fifteen to twenty-six minutes, the two extremes. In the second, ten, or at most fifteen, minutes were required. In no case were bad consequences, which could be ascribed to the nature of the operation, observed to follow.—*B. and F. Med. Rev. and Zeitschrift für die gesammte Medicin.* Band iii. heft 4. 1836.

35. *Remarkable fragility of the Bones.*—To the many extraordinary instances of fractures from the morbid fragility of the bones already upon record, we may add a curious case recently communicated to the University College Medical Society by Mr. Baker. A female 49 years of age, who had been for some years afflicted with scirrhus tumours in various parts of the body, was admitted into the North London Hospital for fracture of the left humerus, incident upon cutting a loaf of bread. A week after her admission she fractured her right humerus on raising herself in bed; she had previously broken the clavicle, in throwing a book out of bed, and had fractured her right humerus, (below the seat of the second fracture) whilst washing the face of one of her children. She subsequently fractured her left humerus in endeavouring to extinguish the flames of a child's dress which had caught fire. A patient of Mr. Liston's fractured her femur by standing on one leg, and shortly afterwards fractured her arm by throwing it over the edge of the splint. In these cases the callus was abundant and the fractures readily united.—*Lancet*, Apr. 8, 1837.

36. *Excision of a portion of the spleen.*—This operation has been performed by Dr. MACDONALD, as we learn from a recent No. of the *India Journal of Medicine*, on a native about 30 years of age, who was gored in the abdomen by a buffalo. Through the wound, which was about three inches in length, a portion of spleen protruded. Six days afterwards the patient sought the advice of Dr. M., who removed the protruded portion of the spleen with the knife. Recovery was rapid.

Another instance in which a portion of spleen was excised by Dr. W. B. Powell, will be found recorded in our No. for Feb. 1828.

37. *Clinical Observations on opening Abscesses*, delivered at La Pitié. By M. LISFRANC.—If you consult those books which treat of abscess, you will find it laid down as a general rule, that where the abscess is of small size, it ought to be left to nature to effect an opening, because this, it is said, will be small, and consequently leave but an inconsiderable cicatrix. According to this view, small abscesses are to be left to themselves, provided they be not too indolent, and do not advance too rapidly. But I reject this method; for if the aperture made by nature be small, why should not that made by art be made small likewise? It is only necessary for this purpose that we use an instrument with a narrow blade, and that we make a simple puncture.

Again, before opening an abscess, it has been thought that we must wait till the matter be well formed, or in other words, till the abscess be ripe, although to this some exceptions have been made, as with regard to abscesses in the abdominal and thoracic parietes, and those situated in the neighbourhood of tendons and joints. I have opened such abscesses before they were well formed, and what has happened? As long as I confined myself to the method recommended in books, I did not reach the root of the malady. Convinced of its insufficiency, I attempted to combat the inflammation excited by the pressure of the pus on the surrounding soft parts, by fomentations and local bleeding. Immediately after opening the abscess, I applied leeches, which were more efficacious in proportion as the swelling was recent.

This first satisfactory result soon led me to another; sometimes the leeches partly failed, and the induration passed into a chronic state. In conformity with the principles which I laid down in treating of white swelling, I allowed this state to remain undisturbed three or four days, after which I successfully attacked it by means of frictions with ointment of hydriodate of potass and ioduret of lead, as well as by compression, when necessary.

One objection only remains to be refuted—that of the pain, which was supposed to be greater in this than in the ordinary method. It is true that the pain of the incision is a little more acute when an abscess is thus prematurely opened, but it only continues a few moments, and accordingly I hold that abscesses ought to be opened as soon as the existence of pus can be detected. I have followed this practice for fifteen years, and I need not remind you that you have yourselves been witnesses of its success.

If you have to open an abscess of small size, as for instance that of an egg, and if the skin be thinner at the centre than any where else, you must make your opening there for two reasons; first, because the integuments being thinner, the instrument passes through a smaller extent of integument, and consequently gives less pain, and also because the incision gives to the integuments a slight degree of stimulus which facilitates their cicatrization; it is also very easy to prevent the pus from stagnating in the abscess by making pressure on its parietes. For larger abscesses it has become an established rule to open them at the most dependent part, unless there be some important blood-vessel or nerve in that situation.

If, in order to arrive at the abscess, you have to pass through a muscle, the incision ought to be made in a direction perpendicular to the action of its fibres—that is to say, that when the muscle is broad, you must cut across; but if, on the contrary, it be narrow, your incision must be parallel to the fibres, to avoid the risk of dividing it altogether. If in the case of a broad muscle, such as I first supposed, your incision were parallel to the fibres, it would almost always happen that the aperture would be completely closed by their contraction. You have lately witnessed a remarkable case, which I may quote here. A patient, in the ward of St. Louis, had a large tumour on the thigh, which not only afforded the ordinary signs of fluctuation, but evinced a distinct gurgling. I practised an incision parallel to the axis of the thigh, at the most dependent part: nothing was evacuated. I introduced a hollow sound into the wound, but still nothing came out. I then made another incision, at a point where the fluctuation was still more evident, but with the same negative result. The patient was very nervous, and his muscles contracted with force. Astonished at the circumstance, I next introduced a grooved sound along the blade of the bistoury, which yet remained in the wound; but still no pus made its appearance. My next proceeding was to make a movement with the two instruments, in such a manner as to separate

them and prevent the contractile action of the muscular fibres: then, at length, the pus found an exit. I request your attention to this point, which is a very important one, for I am persuaded that it happens very often, particularly when the fluctuation is not very evident, that the surgeon, after having made his incision, erroneously supposes there is no pus, merely because the opening having been made parallel to the direction of the muscular fibres, their contraction again closes up the aperture.

Abscesses of the neck ought to be opened by means of a simple puncture. I do not now allude merely to small abscesses: I have opened, in this manner, purulent depôts of considerable size, and, although the extent of the incision was not in proportion to the collection of matter, yet was all the pus evacuated, while the cicatrix which remained did not exceed that of a leech bite. This precept is of great importance, not only to the welfare of the patient, but to the reputation of the surgeon, and, in this double view, merits your attention. The following is an illustration in point:—I was called, three years ago, to Belleville, to open an abscess on the neck of a young lady, which I effected in the manner above recommended. In the same house was a child, having an abscess similar to the other in situation and nature. A practitioner there opened it by an incision of an inch in length, and had reason to repent of having done so: for the comparison of the two children, after the healing of the wounds, was very disadvantageous to him; the wound in his patient having healed slowly, and left a large cicatrix.

In abscesses of the neck, owing to the smallness of the aperture, the want of freedom with which the pus flows, and its remaining about the cellular tissue, there may be a little lodgment at the lower part, forming a kind of *cul de sac*, whence compression is insufficient entirely to dislodge the matter. In such case it is necessary to make a small counter opening, cutting upon the grooved canula, so as to make a second incision, no larger than the first, and thus the two look like leech-bites. The same precepts apply to those parts generally which are habitually exposed. In the neck, as on the forehead, the incision ought to be transverse,—that is, in the direction which the folds of the skin naturally assume in those situations.

In those parts, however, where the appearance of the cicatrix is not an object, modern surgeons make incisions of several inches where the abscess is large: and experience has proved the advantage of this practice. The bistoury is to be held in the first position: the two last fingers, separated from each other, and extended, are to be placed, if possible, beyond the tumour, as a *point d'appui*: the tissues which are penetrated must be divided in a perpendicular direction: the middle finger, placed on the blade of the instrument, serves to regulate the depth of the incision. This is very important, for if the instrument cuts ill, or if the texture be hard, we are under the necessity of pressing more strongly on the parts to be divided: and without the precaution of having the finger as I have described, we should incur the risk of plunging in the instrument too far. Besides, it is easy to push the bistoury farther in if necessary, by drawing back the finger on the blade of the instrument. We must do all gently: thus, when the blade arrives in the collection of pus, the hand will perceive the fact, because the knife is now passing through a less resistance than before. The only exception to this is where there are muscular contractions of a nature to interfere with the resistance. I cannot well give you a measure of the slowness necessary in this proceeding; but always remember this fundamental principle in operative surgery—*tutè* is better than *cito*.

I have advised you to make the instrument penetrate the integuments perpendicularly: this rule applies to all such punctures, and it is proper that I should point out its importance. If the bistoury traverses the textures obliquely, it will have to pass through a greater extent of them, and hence, consequently, there is more pain: hence, also, the exit of the matter is less free, and probably we may have infiltration of the surrounding parts in consequence. Besides, in abscess on the parietes of the abdomen, there may be a hernia without any indication directing our attention to it. I was called by Dr. Piorry to a woman who had received a kick on the belly, in consequence of which an abscess had formed there. The patient was carefully interrogated, and assured us that she had never suffered from any symptom connected with the digestive organs,—there

had never been anything indicative of hernia. However, I opened the abscess cautiously, when a gush of purulent matter escaped, and I then saw that there was a knuckle of intestine floating in the tumour. What would have happened had I thrust the instrument into the tumour with that degree of *brusquerie* which some affect on all occasions?

An abscess deep in the parietes of the chest or abdomen may be actually in contact with the pleura or peritoneum, while that in the neighbourhood of a joint may reach to the capsular ligament. If, then, you open abscesses of this nature with no more precaution than what is generally adopted—and especially if the muscular contraction prevents you from judging when you have passed from the more into the less resisting part—or, if the abscess be not entirely filled, I repeat, that under such circumstances you incur the risk of penetrating the pleura or peritoneum. It is therefore imperiously necessary to open the abscess as carefully as if it were a hernial sac.

I must not forget to add, that in proportion as the incision is made, the forefinger being introduced into it, enables us the better to appreciate the depth at which the collection of matter is situated. I know that this is painful to the patient, but the suffering is not of a nature to have any effect upon his health, and we must above all attend to his safety.

If the abscess be in the course of a large nerve or artery, you are told to make the incision so as to avoid it. But the tumefaction and induration of the parts are such, that you cannot recognise their relative situation; and although anatomy tells us the natural situation of the vessels, yet the developement of an abscess often changes the relative position of the surrounding parts. If the artery and nerve in question always retained their wonted place, there would be no difficulty; but, as I have said, they are frequently displaced, and if you cannot ascertain their new position, what are you to do? Certainly, not to imitate those practitioners who, in order to conceal their embarrassment, declare the abscess to be not yet mature, and so postpone opening it. This delay may be attended with the worst consequences. If, for instance, an abscess be situated in the neck, near the carotid artery, the jugular vein, or the eighth pair of nerves, or great sympathetic, in the midst of the fine loose tissue of that region, the matter may find its way into the chest, or, according to Desault, even into the abdomen. It is, therefore, urgently necessary to open all such abscesses very promptly, and it is now twenty years since I have adopted this method. Take the neck as an example: I there make an incision parallel to its axis, and which divides layer by layer successively the skin, the cellular membrane, and, if necessary, the superficial aponeurosis. I next take a blunt probe, and limit the extent to which it is to penetrate the textures, by holding it between the thumb and forefinger. I then introduce this to the bottom of my incision, and make it pass on by separating or rather pushing aside, the fibres of the parts beneath. Whenever the instrument has entered the abscess, there is a cessation of resistance, besides which I perceive drops of pus oozing along the sides of the instrument. I then push it upwards and downwards, so as to enlarge the opening, and thus the matter finds a ready exit.

Such is the result of twenty years' experience, and I have never yet met with any accident from hemorrhage: I am therefore inclined to believe that those surgeons, otherwise very able, in whose hands such occurrences have taken place, have either been ignorant of, or neglected, the precautions here laid down.—*Gazette des Hôpitaux*.

38. *Treatment of Hydrocele by injections of Iodine*.—In our preceding No., p. 508, we noticed the employment by M. Velpeau, of a solution of iodine, as an injection for the cure of hydrocele. He appears, however, to have been anticipated in the use of this remedy, by Mr. J. R. MARTIN. This last named gentleman in a paper communicated to the Medical and Physical Society of Calcutta, in Jan. 1835, and published in the seventh volume of their Transactions, states that he had up to the time of presenting his paper, treated upwards of ninety cases with the iodine injection, without danger or inconvenience. In only one case did he observe symptoms of a dangerous tendency to supervene; and, as it even tends to confirm the safety of the operation, it may be worthy of mention. "It was that (says Mr. Martin) of a Mahomedan labourer, who went about his occupations

for fourteen days after the operation, and came into the hospital on the fifteenth, with a highly-inflamed and shining scrotum. A few leeches, an evaporating lotion, and a purgative, prevented any accident. Finding the proportions in the injection at first used, to answer so well, (a solution of tincture of iodine, in the proportion of two drachms to six of water, of the ordinary temperature,) I have never altered them; nor need there, perhaps, be any change, even when Europeans are the subjects of operation. In the case of a few robust Mahomedans, who use animal food, but one common urethra-syringe full was injected, and that quantity may be found sufficient in the cases of most Europeans.

"The effects of the iodine solution seem to be immediate, the inflammation arriving at its height in about twenty-four hours, and after that subsiding rapidly. In only two instances has bleeding by leeches been found necessary. Poultices, cold lotions, and purgatives, have generally constituted the treatment; and even these have not been had recourse to in a large proportion of cases.

"Twelve cases of double hydrocele, treated on both sides at once, recovered with quite as much ease and expédition as the single cases. In one of these cases a much larger quantity than had before been tried was injected with safety; but if there be any superiority in the iodine injection, as used by me, it consists in the smallness of the quantity used, and its being retained; for, in the hands of the best surgeons, infiltration may and does very frequently happen with the port wine solution, owing, as I conceive, to the cremaster muscle, excited by pain, drawing the cavity of the sac off the end of the canula.

"The only caution that appears to me to be necessary in the performance of the injection with iodine, is to see that the syringe is in good order, that the piston fits well; otherwise air will be injected, and the operator deceived as to the quantity of fluid used."

In the *Indian Journal of Medicine* for May, 1836, two cases are also related by Dr. STEWART, successfully treated at the Calcutta General Hospital, with injections of iodine.

39. *Ligature of the Arteria Innominata*.—This operation has been performed by Mr. LIZARS for aneurism of the subclavian artery. The patient died twenty-one days after the operation. We shall give the details of the case in our next number.

MIDWIFERY.

40. *Administration of the Ergot of Rye in anticipation of Uterine Hemorrhage*.—The *Lancet* of the 15th of April last, contains some observations from Mr. BRADLEY, on his successful administration of the ergot of rye in a case of uterine hemorrhage, immediately succeeding the expulsion of the child, which he concludes by asking whether, when such an unfortunate event is apprehended, it might not be prevented altogether, by giving the ergot immediately before the birth of the child?

In the subsequent No. of the same Journal, (April 22,) T. ABRAHAM, Esq. bears testimony to the successful administration of the remedy under the circumstances indicated, in six cases; and J. FUSCH, Esq., states that he has been accustomed for some time past, to exhibit the ergot in similar cases, and with the most happy results. So satisfied is this last practitioner of the powers of the ergot in preventing uterine hemorrhage, that he invariably inquires, he states, whether the patient has been in the habit of flooding after delivery, and if so of using the ergot as suggested by Mr. Bradley.

The utility of this practice is unquestionable; but if it has any novelty on the other side of the Atlantic, as we suppose it has from the stress laid upon it in the communications just noticed, it certainly possesses no claim to such distinction here. This practice is pointed out by Dr. Stearns of New York, in his pamphlet on the Ergot, published upwards of 15 years ago, (see *Philada. Journ. Med. and Phys. Sci.*, Vol. V, p. 44), and was employed many years since, by our venerable and esteemed friend Dr. Dewees, and is distinctly and strongly recommended by him in his valuable system of midwifery.

II. *Pregnancy with Imperforate Uterus*.—A very interesting and remarkable case supposed to be of this description, is recorded in *Guy's Hospital Reports*, Part IV., by Mr. TWEEDIE. The subject of it, a woman about 24 years of age, had menstruated every three or four weeks since the age of 14. The discharge was always pale and scanty, and continued from two to three days. She never suffered pain at those periods. She was married on the 4th of February, 1836, since which period she had not menstruated. Both before, and subsequent to her marriage, she had enjoyed robust health, and though she has undergone an unusual degree of laborious exertion, has not had a day's ill health. On the 10th of November she noticed a rather copious reddish discharge, which continually drained from her, but without pain. This subsided in a couple of days, when slight pains in the back were felt, which went on till the night of the 14th, when they became so severe and urgent, that she summoned her medical attendant. There was no show as yet. The pains at this time were very urgent and powerful, and on examination there was found "a firm, uniform, globular mass, forcing down into the vagina at every pain (which was of great force) but no irregularity upon its surface could be detected; and a very careful examination of the entire vagina, whose extremity was easily reached at all points, failed in detecting the os uteri." After the lapse of a few hours, during which labour pains persisted, and were of unusual severity, another examination was made. At the upper part of the canal, at each pain, there was forced down a globular body of the bulk of a child's head, and conveying the impression of an entire uterus, without orifice. About the spot where the os uteri should have been, was a minute portion somewhat thinner than the surrounding parts; but the whole was uniformly smooth, and contained no break whatever. On the receding of the mass, in the absence of pain, something like a child's head could be felt within. Dr. Tweedie having satisfied himself at this second examination, that there really was no orifice into the uterus, and the pains continuing of a severe character—and the existence of a living child being proved by the pulsations of the fœtal heart, which were distinctly audible, Dr. Ashwell was called in, who determined to make, without delay, an artificial opening across the spot where the globular body seemed slightly thinner than elsewhere. Accordingly, having placed the patient on her left side, the doctor introduced his left forefinger as a director; upon which he passed up a curved sharp-pointed bistoury with his right hand; and having punctured the spot already fixed upon, he incised forwards towards the bladder, (which was empty) and backwards towards the rectum. At this last incision, a few drachms of dark blood flowed out. The liquor amnii of course escaped; and the head fell upon the artificial opening, which proved to be of the diameter of an inch and a half, or two inches, and about a line in thickness. No lateral incision was made, for fear of wounding the branches of the uterine arteries. The pains abated after the operation, but soon returned, and under the influence of the pains, two rents were effected, one towards the right side, and the other backwards towards the left sacro-iliac synchondrosis. The laceration on the right side did not extend to the reflection of the vagina; that on the posterior part was beyond reach. No gush of blood attended these lacerations. The patient became faint, however, but rallied under the administration of stimulants, and delivery was effected at 11 A. M., Nov. 16. The child was asphyxiated, but revived; the placenta was taken away in half an hour, and the uterus contracted well. Under the use of opiates, effervescent draughts, and subsequently tonics, the patient recovered.

The following is the result of a subsequent examination.

"The vagina is short; its extremity, and every part of it, can be readily reached by the shortest finger; it presents no other peculiarity. There is no cervix uteri. The uterus seems reduced nearly to a normal unimpregnated size. At the extremity of the vagina, there is a puckered irregular orifice, into which the tip of the finger can enter: it is soft, with smooth and thick edges, not perfectly circular in consequence of certain indentations, as if from the drawing together of several small rents. It might be compared to the base of an apple; whilst this part of a normal uterus would better resemble the apex of a pear. Radiating from this central aperture can be distinctly felt three ridges, like lines of adhesion; one passing forwards towards the right ilio pubic junction, traceable nearly to the reflexion of the vagina; one opposite to this, backwards, towards the left sacro-iliac synchondrosis, whose extremity is lost in the reflexion of the vagina; and the

third of short extent, about one third of an inch long, passing backwards and to the right."

JOHN NORTH, Esq., in an interesting article in the *London Medical Gazette* of the 10th of June, 1837, expresses some doubts of the real nature of the above case, as there are so many cases on record in which the uterus has been supposed to be imperforate at the time of labour, but, upon subsequent examination, it has been ascertained that the os and cervix uteri, had escaped detection, in consequence of their mal-position. In some of these cases after delivery had been effected by incisions into the uterus, upon the presumption that there was no os uteri, both the os and cervix uteri have been found in their natural situation, and naturally constructed. Mr. North observes, "that there are some circumstances connected with this case, which I confess I cannot comprehend, and which seem to render the assumed fact of the uterus being imperforate scarcely conceivable. The complete closure of the os uteri must of course have taken place after conception, and as far as I know could only result from some disease, some active inflammation of the os or cervix uteri at some period of pregnancy, which in this instance could not have existed, inasmuch as it is stated that the patient both before and subsequent to her marriage has had robust health." The doubts that have been expressed by the highest obstetrical authorities as to the fact of the absence of the os uteri in many of the cases in which this rare anomaly had been presumed to exist, apply exactly to this case, as far as can be judged from the report given of it. For example, Baudelocque asks,* "A quoi pourroit-on l'attribuer, (l'obturation de l'orifice de la matrice) chez les femmes où l'on a cru la rencontrer au moment de l'accouchement? à l'inflammation, sans doute, et à l'altération du col de la matrice. Mais rien ne fait présumer que chez elles de telles affections aient lieu pendant la grossesse." Desormeaux† says, "pour que l'orifice de l'utérus s'oblitére et s'efface pendant la grossesse, il faudrait qu'il se fût développé une inflammation assez vive, ce qui ne peut arriver que très rarement; or dans la plupart des cas on ne parle pas d'inflammation." Lastly, Velpeau‡ thus states his opinion upon the subject: "Il n'y a évidemment qu'une maladie grave, une inflammation aiguë, qui puisse fermer ainsi le sommet de la matrice entre la fécondation et le terme de l'accouchement. Dans ce cas, les parties sont nécessairement le siège d'altérations concomitantes propres à lever tous les doutes. Les signes anatomiques auraient d'avance éveillé l'attention." In these quotations, I have taken the liberty of italicising the opinions of the distinguished writers which are directly opposed to the closure of the os uteri at the time of labour in a patient who "had not had a day's ill health," and who was always fit for an "unusual degree of laborious exertion." The report of the case states, that "for two or three days before labour came on, she noticed a rather copious reddish discharge that continually drained from her." From whence, if not from the uterus, and through its natural opening, the os uteri, is it probable that this "rather copious discharge" proceeded?

"The whole description of the case," he adds, "is exactly similar to many I have seen, and to still more described by various writers, where the os uteri could not be detected by any ordinary examination, or even by the introduction of the hand, until after many hours' duration of severe labour pains, in consequence of there being so great a degree of anterior obliquity of the uterus as to throw the cervix and os uteri back towards the sacrum, or even above the sacro-vertebral angle. I confess that more than twenty years ago I was much perplexed by two of these cases that occurred to me. In the words of Velpeau, "I dreamt of anomalies, and knew not what to think." In several such cases I have subsequently known other practitioners at fault, and who fancied from "the firm, uniform, globular mass forcing down into the vagina" upon which no orifice could be detected, that there really was no os uteri. By patience, however, and proper management, the efforts of nature, and sometimes, though very rarely, manual assistance, which in such cases is seldom required, the os uteri has been brought into a more favourable position, and the delivery has been safely though very slowly terminated.

"If the pelvis is large, the uterus is in such cases forced into its cavity by re-

* Journal General de Med. t. 52, p. 42.

† Dict. de Med. t. 15, p. 150.

‡ Accouchemens, 2nde édit. t. 2, p. 216.

peated and violent pains, which have little or no effect in dilating the os uteri, in consequence of its being out of the line of direction of the expulsive force. The anterior and inferior part of the body of the uterus may even approach the os externum; the head of the child, or any other part that presents, being distinctly felt through the thin and distended uterine parietes. In such instances, either of two mistakes have often been committed. In the first place, it has often been thought that there was no os uteri, because it could not be detected by any ordinary examination with the fingers, however carefully conducted. Secondly, it has as frequently been supposed that the labour would be speedily terminated when it had scarcely commenced, for the head of the child is felt so distinctly, although still covered by the thinly expanded uterus, as to lead to the belief that the os uteri was entirely obliterated, although it was little, if at all, dilated. I will refer to a few authorities for the purpose of corroborating the opinions I have given; of showing how cautious we should be in presuming the uterus is imperforate, and also of shewing how completely the most experienced practitioners have been deceived in their diagnosis of such cases. Denman* says, "Cases have been recorded, in which it was said that the os uteri was perfectly closed, and in which it has not only been proposed with a pair of scissors to make an artificial opening instead of the closed natural one, but the operation has been actually performed." "I am persuaded there has been an error in some of these cases, and that what has been called a perfect closure of the os uteri has not been such, but that the practitioner has, at perhaps an advanced period of the labour, been unable to discover it by reason of its obliquity." Dewees† thus strongly expresses himself: "Within our own knowledge, this case (anterior obliquity of the uterus) has been mistaken for an occlusion of the os uteri, and where, upon consultation, it was determined that the uterus should be cut to make an artificial opening for the fœtus to pass through. They thought themselves justified in this opinion, first, by no os uteri being discoverable by the most diligent search for it; and secondly, by the head being about to engage under the arch of the pubes, covered by the womb. Accordingly, the labia were separated, and the uterine tumour brought into view: an incision was now made by a scalpel through the whole length of the exposed tumour, down to the head of the child. In due course of time the artificial opening was sufficiently dilated to give passage to the child. The woman recovered, and to the disgrace of the accoucheurs who attended her, was delivered *per vias naturales* of several children afterwards, a damning proof that the operation was most wantonly performed." Desormeaux‡ gives evidence to the same effect. Kilian§ remarks, that in cases of supposed closure of the os uteri, the practitioner must be very much upon his guard, and very mistrustful of himself, for the diagnosis is by no means easy. Jörg,|| in commenting upon "der schiefheit des gebärenden uterus," obliquity of the pregnant uterus, observes, that it often causes great perplexity to the practitioner, who, in consequence of not being able to feel the os uteri after many hours' duration of severe labour pains, commonly believes that the uterus is imperforate. Baudeloque,¶ in a very instructive paper on the subject, gives several cases in which mistakes were committed, and needless operations performed by experienced practitioners. Velpeau** says, that he has so frequently known tolerably experienced practitioners affirm that there was no os uteri, when it was merely raised towards the sacro-vertebral angle, that he has no difficulty in referring to this mistake the majority of cases of supposed obliteration, and that for beginners the anterior obliquity of the uterus is very embarrassing; "ne trouvant pas de col, ils rêvent des anomalies, ou ne savent que penser." He mentions the following case, which is quite in point. It happened to one of his friends, who had practised three years, "avec distinction dans la capitale." The account was transmitted by letter to Velpeau. I do not presume to offer this as the counterpart of any other case, although, no doubt, its fellow might be found. I will not spoil it by translation. "J'ai passé la nuit près Madame de S.; le travail paraît marcher régulièrement; mais je ne trouve point l'orifice; j'ai porté le doigt vers le promontoire, puis du côté des

* Midwifery, 7th edit. by Waller, p. 241.

† System of Midwifery, p. 90.

‡ Dict. de Médecine, t. 15, p. 159.

§ Die Operative Geburtshilfe, Erster Band, 279.

|| Krankheiten des Weibes, Zweyte Auflage, 650.

¶ Journ. Gen. de Med. t. 52, p. 31, et seq.

** Loc. cit. 216 and 229.

fosses iliaques, puis en avant derrière le pubis; partout je suis arrivé jusqu'au cul-de-sac formé par l'extrémité supérieure du vagin; mais je n'ai point trouvé le col; qu'ai-je à faire, qu'est-ce que cela veut dire?" Velpeau thus clears up the mystery: "C'est qu'en effet l'orifice était tellement porté en arrière et en haut sur la tumeur, que pour l'atteindre, il fallait recourber le doigt en crochet tout-à-fait en avant."

"The patient whose case is related in the Guy's Hospital Reports was in labour with her first child. It is true that so great a degree of anterior obliquity of the uterus, as to lead to an erroneous diagnosis at the time of labour, occurs much more frequently in women who have borne many children, in consequence of the abdominal parietes having lost their power by frequent distension of supporting the gravid uterus. But it may and does happen occasionally in first labours, either from a natural flaccidity of the abdominal parietes, from the brim of the pelvis being inclined more forward than usual, or from an unusual convexity of the lumbar portion of the spinal column. It is stated in the case I refer to that a careful investigation was made about a month after delivery, and that there was no cervix uteri. In a case related by Lauverjat,* in which he and many other practitioners fancied there was no os uteri, and in which, consequently, an incision was made into the uterus, neither the os nor cervix uteri could be detected for two months after the operation. "L'un et l'autre alors étoient dans l'état le plus naturel."

The doubts expressed by Mr. North, concerning the nature of Mr. Tweedie's case, may be unfounded; but at all events, the facts mentioned by the former, may tend to guard young practitioners against hastily assuming that the uterus is imperforate at the time of labour, and to impose upon their minds the difficulty of the diagnosis in a description of cases which are generally not sufficiently dwelt on by medical teachers.

42. *Expulsion of the Placenta before the birth of the child.*—Mr. J. H. BULL, has communicated to the *London Medical Gazette*, (Jan. 21, 1837,) an interesting example of this. It occurred in a woman in labour with her sixth child. About two hours before seen by Mr. B., the patient had had alarming hemorrhage, from the effects of which much exhaustion ensued; however, on the recurrence of her labour pains, she had expelled the placenta, and the fœtus still remained in utero. Mr. B. found the cord without pulsation, and a presentation of the arm as high as the axilla. There was powerful uterine action. With some difficulty, Mr. B. turned the child, and delivered the woman forthwith, and she recovered without any subsequent untoward accident.

A similar case is related in the succeeding No. of the *same Journal*, by E. A. CORY, Esq. The subject of this case, was about 38 years of age, and had been in labour some hours before visited by Mr. C. The examination showed the placenta occupying the vagina, being at the same time extra-uterine, and an arm presentation. The liquor amnii had been discharged, and the os uteri fully dilated. The operation of version was immediately attempted to be performed; but so firmly was the fetal body embraced by the uterus, that it would have been impossible to have effected it without risking the infliction of severe injury upon that organ. Mr. C.,—believing "that the woman ought to be delivered as soon as it could be accomplished with safety, as it was evident that we were indebted for the absence of hemorrhage to the unusual contractile power exerted by the uterus, and that any sudden or gradual diminution of its contractility, although it might facilitate the operation of turning, yet would in all probability give rise to copious hemorrhage, highly dangerous to the life of the patient; and as the want of pulsation in the umbilical cord demonstrated that the fœtus no longer possessed vitality,"—eviscerated the chest and abdomen. On the third day after the operation, some symptoms of uterine inflammation came on, which, however, yielded to appropriate treatment, and the patient perfectly recovered.

The most remarkable fact in the case is that there was no more hemorrhage than in ordinary parturition; a circumstance attributable to the powerful contraction of the uterus on the fetal body.

The *Jamaica Physical Journal* for September and October 1836, contains an

* Neue Methode den Kayserchnitt zu machen, 188. Quoted by Baudelocque, loc. cit. p. 45.

account of a third case similar to the preceding, communicated by Mr. JOHN L. REED. The subject of this case was a negro woman 24 years of age, who had always enjoyed good health, and had previously had three children. Her first labour had been severe; the other two natural. When seen by Mr. Reed, in her present labour, the old woman informed him, "that the after birth had come away, and one of the arms had come down, and she had returned it." On examination, Mr. R. felt the placenta lying between the patient's legs, and the umbilicus attached. He followed it up the vagina, where he found the right arm, elbow and fore-arm occupying it. At the mouth of the uterus he felt the right shoulder and *trachea*! The parts were not fully dilated; her pains had been trilling; the introduction of Mr. R.'s fingers excited them slightly, and on their accession there was a gush of blood, though what was remarkable the hemorrhage was not profuse. On passing his finger a little higher up, Mr. R. felt "the larynx and chin, the cord being twisted twice round the neck—the head flexed under the back! the belly looking upwards, and the cord unruptured throughout its whole attachment and connected with the child."

Mr. R. states that not being able to deliver by turning, owing to the condition of the parts, and the danger from hemorrhage not being apparent, he determined to place the head in its proper position, and deliver with forceps. Some time was lost in procuring these instruments, at the expiration of which, on examination, the parts were found more dilated, and a greater degree of hemorrhage; "the occiput had slipped over the pubic arch," says Mr. R., "and I therefore determined to deliver some way or other—and that immediately, and in which I succeeded by turning. I found the feet curiously doubled behind the back, over the hips; I easily extricated them, and gradually brought them down with my right hand, while with my left, externally I pushed the cranium upwards, and in this movement reversed the belly and back, consequently placing the face towards the sacrum. Having delivered the body, it was arrested in its progress by the hands and arms, which were delivered in turn—first, the left or under one, and then the right or upper one. The head then became fixed in the sacro pubic diameter; I passed the two fore-fingers of my right hand along the neck, and introduced them into the child's mouth, by which means I easily unlocked the head and perfected the delivery. The child, placenta, and umbilical cord all entire! The uterus contracted a little, and there was not much flooding. The child was very large, and the head particularly so. The patient being relieved, and feeling a desire to sleep, I left her. She was to all appearance quiet and easy; in about three hours after I saw her, and found her slumbering, consequently I did not disturb her. Again I visited her in about two hours, and I then discovered great vascular excitement, with increased inflammatory action, evolving the whole of the peritoneum—the abdomen tumid and painful in the extreme; notwithstanding the most energetic measures, such as venesection, enemata, blisters, &c. &c. she died exactly forty-four hours after delivery. The means adopted did at one time lead me to expect a different result, but the relief was but temporary."

43. *Cæsarean operation performed four times with success in the same woman.*—In our No. for August, 1835, p. 526, et seq., there is the narrative of a case in which the cæsarean operation had been three times successfully performed in the same individual. The subject of this same case, Anna Margareta Adametz, whose name deserves to be put on record, has a fourth time been delivered by the same operation. The following history of this last pregnancy and operation, we extract from a paper by Dr. Charlton, in the *Edinburg Med. and Surg. Journal*, for April, 1837.

Adametz became pregnant for the fourth time, and was admitted into the general lying-in hospital at Kiel, in the beginning of April, 1836. Her abdomen was pendulous, as on the preceding pregnancies, and so distended, that, for several weeks before parturition, she was affected with pains exactly resembling labour-pains. These pains, however, did not dilate the *os uteri*, the aperture of which was so small that it seemed rather like a perforation made with some sharp-pointed instrument. Her pregnancy passed over without any unfavourable symptoms, except that, towards the end of it, she was affected with a severe cough, which was then prevalent in the country. This, however, ceased before the labour-pains came on, which was on the 24th of June, 1836. By these the *os uteri*

was soon dilated to such an extent that the membranes could be felt protruding in the vagina. After this the pains became much less strong, nor had they dilated the *os uteri* any more on the 26th at 2 p. m. But from this time the pains became so urgent, that by 10 p. m. two fingers could be introduced into the *os uteri*. The waters came away on the following night at half-past one, and were followed by a prolapsus of the cord, the veins of which were greatly swelled, and its pulsations, which at first were very frequent, gradually became slower and less strong. Every thing having been long previously prepared for the operation, it was performed on the 27th of June by Dr. Michaelis. The bowels having been emptied by an enema, and the urine drawn off with the catheter, the patient was placed on a table covered with a mattress, and merely held by the assistants, who were disposed in the same manner as in the previous operations.

The incision was made on the left side of the abdomen, and thence extended five inches towards the median line, passing through the cicatrix of the third operation, as the uterus here seemed to be most closely adherent to the parietes of the abdomen. Two strokes of the scalpel divided the abdominal parietes with the peritoneum, and the uterus was then cut through by repeated slices. The wound in the uterus was then enlarged with the blunt-ended bistoury, to the same extent as that in the parietes of the abdomen. A remarkable appearance now presented itself. The uterus every where adhered completely to the parietes of the abdomen, so that the cavity of the abdomen was not opened at all, nor was a single convolution of intestine visible during the whole operation. The placenta now appeared in the middle of the wound, and being pushed aside, the operator inserted his hand into the cavity of the uterus, and seizing the left foot of the child, extracted first that limb and then the other. The trunk and upper extremities easily followed, but the head was retained for some time by the contraction of the uterus. The child, a girl, was affected with the same spasms as were noticed in the second instance, but they soon disappeared on applying cold water to the chest. The placenta followed soon after, and came away easily, but the membranes were with difficulty separated from the right side of the uterus. The wound, which was now diminished to three inches and a half in length, was united by means of three sutures, and the intervening spaces were held together by long strips of adhesive plaster, passed under the body and crossed in front. An aperture, however, was left at the inferior part of the wound, into which a piece of lint was inserted to permit of a free discharge. The whole wound was then covered with lint, and the abdomen secured by a binder fitted close to the body. The patient, who had scarcely complained during the whole operation, having taken ten drops of laudanum, was carefully placed in bed by the operator himself. The following short report of her recovery is extracted from the books of the hospital.

27th June. After pains came on directly after the operation, and in order to procure sleep for the patient, she took five drops of laudanum and tincture of cinnamon. Pulse 110; urine twice passed naturally; tongue moist and clean; great thirst, and slight inclination to vomit; skin moist and warm; great redness of the face; complains of head-ache, but is otherwise in excellent spirits. During the night between the 27th and 28th the pains of the abdomen increased to such a degree as entirely to prevent sleep, and the belly was at the same time extremely painful and tender on pressure. In consequence of this, the bands of adhesive plaster were cut through, as they compressed the abdomen, which, in addition to a few drops of tincture of opium, greatly mitigated the pains. The pulse was 150, small and weak; great thirst, and cold perspiration.

28th. On the whole, the patient feels very well; the lochial discharge flows freely; but the bowels are slow, she has had no passage from enema, on account of which an oleaginous mixture was given to her, to which was added the sulphate of potash.

29th. The pains of the belly had continued during the night, though the patient took a considerable quantity of tincture of opium, and during the day became much more intense than is usual among puerperal females. The pulse was 140, hard and small; the face pale; the bowels costive, and the patient had frequent retching. As these symptoms indicated incipient inflammation, twelve leeches were applied to the epigastrium, and the patient took two grains of calomel every hour.

30th. Under the use of these remedies the inflammatory symptoms disappeared, but she still complained of colicky pains in the right hypochondrium, and as she had had eleven copious and feculent stools since the operation, she took twelve drops of tincture of opium.

July 1st. Pain of abdomen still complained of; six stools. Continue the opium.

With regard to the state of the wound, the sutures have been cut away, as the upper part has already united, but the skin in the lower part having been cut by the sutures it still remains open. The wound of the parietes does not correspond with that of the uterus, as they are drawn towards the left side.

July 2nd. As the pain of right hypochondrium continued to increase, three leeches were applied to the part, and afterwards a blister, by which they were considerably mitigated. During the following days the strength of the patient gradually decreased from incessant diarrhoea, which was, however, at length put a stop to, though with considerable difficulty, by opiate enemata. Nutritious diet was given her without fear of inflammation, and the patient so rapidly recovered, that, by the end of July, she was almost completely restored to health. A fistulous opening, however, remained, as on the former occasions, which was not healed when she left the hospital with her fine healthy child on the 25th of August last.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

41. *Fracture of the Skull and Rupture of the longitudinal Sinus during Natural Labour.* By Dr. MICHAELIS, of Kiel.—A woman, aged thirty-six, was taken in labour with her first child on the 27th February, 1836. After slight pains for thirty-six hours, the waters came away at four P. M. of the 29th. At this time the midwife found the os uteri open, but full and hard. At eight o'clock on the following morning, Dr. M. was called, and found the patient, as is common in Germany, on the labour-chair, with sufficient but not severe labour pains, the vagina extremely tender, dry, and hot, and the perineum tense, and the child's head completely in the pelvis. The woman was put into bed, and warm cataplasms applied to the genitals; and in two hours things were completely changed, the parts being now only moderately swelled, lubricated, and not painful, while the head advanced under good pains, only apparently strongly jammed against the immovable coccyx. At eleven o'clock the child was born. Examination immediately after the child was born detected no deformity of the pelvis, the diameter of the outlet being certainly not less than three inches and three quarters. The child breathed both during birth and immediately after, but then died.

The head was much disfigured, and, on examining it carefully, the following appearances were found: 1. The frontal bones were normal as to structure and uninjured, but so flattened that the frontal and parietal portions lay nearly in the same plane. 2. The fontanelle and anterior two-thirds of the sagittal suture projected high up, and the sagittal borders of the parietal bones were thrown open and partook of the displacement. 3. The left parietal bone was not otherwise affected, and, with the exception of a few points which were very thin, it was well-formed. 4. In the posterior third part of the sagittal suture, where the parietal bones were firm and well formed, and the suture only two lines in width, were seen small livid portions of the longitudinal sinus forced between the bones. 5. The occipital bone was flattened and forced deep under the parietal bones, but not otherwise injured. 6. The right parietal bone, which during birth had been directed towards the promontory of the sacrum, was found covered anteriorly and above with effused blood, and, on removal of the periosteum, was found fractured in five places. These fractures or fissures were as follows: *a*, a small fissure near the *tuber ossis frontis*, four lines long; *b*, a much larger one running from the fontanelle through the centre of the parietal bone, very nearly two inches in length; *c*, *d*, two small fissures half an inch in length, near the sagittal suture. There were also four small openings, from incomplete ossification, in the same bone, which was throughout very thin.

On opening the skull, there was found no extravasation beneath the fissures,

but posteriorly under the sagittal suture the longitudinal sinus was found ruptured, and there was an extensive coagulum on the cerebrum on both sides, under the dura mater, and on the tentorium cerebelli.

The peculiarity of this case is, the occurrence of so extensive injury during natural labour and with a well-formed pelvis; and is explained by the natural weakness of the bone and then favourable position of the head during birth.—*B. and F. Med. Rev. and Zeitschrift für die gesammte Medicin.* B. iii. H. 4.

45. *Case of Poisoning by Liquor Potassæ.* By DARTO-MASSART, Pharmacien at Mons.—Mr. D., aged thirty-five, drank, instead of wine, a quantity of water of potash. Soon perceiving the error, he complained of severe pains in the epigastric region and nausea, and, in the course of a quarter of an hour, of general coldness; face pale, presenting the appearance of intense suffering. A solution of tartaric acid was administered, (four drachms to the pint of water,) and given at short intervals. Sinapisms were applied to the feet, and emollient fomentations to the abdomen, with frequent enemas. In a short time the symptoms abated, and he began to grow warm; a slight perspiration continued for two hours, followed by a black stool. Two days after, the tongue and back part of the mouth threw off a very thick and tough membrane. The patient took small quantities of broth, and shortly recovered his health.—*Gazette Médicale de Paris*, November, 1836.

MEDICAL STATISTICS.

46. *The inapplicability of Statistics to the Practice of Medicine.*—This question has been recently brought before the Royal Academy of Medicine at Paris, and been very elaborately and fully examined. The following paper read by Mr. Double, in the discussion, excited considerable attention, and we shall lay it before our readers, as the subject is one of great importance. For ourselves we have already expressed our opinions on the subject (see our No. for August 1836, p. 489.) and need only add that it is our continued conviction that until some new problem in transcendental mathematics, shall be devised, the numerical method can never serve to guide us to a positive method of treating individual cases of disease. At the same time we disclaim all wish to invalidate the general usefulness of statistics in medicine. But we will not detain our readers further from the observations of Mr. Double.

“The science of statistics is in these days one of the most fashionable; and in the ardour of their zeal its disciples have applied it indiscriminately to medicine. They have attempted to substitute mathematical for logical analysis—to make arithmetic take the place of induction—and calculation that of reason. Let us, then, consider what some expect from statistics applied to medical practice. In mathematical analysis, the probability of future events is calculated from the observation of preceding facts, but always under the rules of the universal laws of large numbers, and without any individual application.

“In medical statistics, on the other hand, the numerical method is expected to determine from the observation of preceding facts, and according to their number, the best method of treatment in each individual case which may occur. This, however, is quite impossible; and I may remark, that were it ever effected, medicine would cease to be either a science, an art, or even a profession: it would become as mechanical as the employment of the shoemaker.

“What is called in geometry the universal law of large numbers, is the rule and the foundation of all calculations of probabilities. One of the conditions of this law is, that the causes of the events calculated, though some are constant and others variable, yet can in no sense be said to vary progressively. From this law it results, that all the differences and irregularities which balance each other disappear in the quotient: and in this way the calculations of lotteries, of maritime insurances, &c. are made.

“But this is evidently not applicable to medicine: neither our successes nor our failures balance themselves in large numbers, as in the case of marine insurances. Each of our problems embraces but one individual; and besides, diseases always

have their prevailing character, varying progressively according to an infinite variety of causes.

"M. Poisson, in his new work on the Calculation of Verdicts given by Juries, writes thus:—"In most questions of eventuality, the *à priori* determination of the chances of events is impossible, and it is only from observed results that we are able to calculate them. Thus we cannot *à priori*, calculate the chance of a vessel being lost in a long voyage, but we must compare the number of losses with that of voyages: when the number is large, the result is pretty constant, at least in each sea and in each nation; but if the calculation be founded on a small number of facts, there can be no certainty in the reckoner's results; if it be founded on a large number, the results are almost sure."

"Besides this, it must be remarked that mathematicians themselves are not all agreed as to the value of mathematical analysis applied to the calculation of probabilities.

"The calculation of probabilities, from its very nature and professed scope, only makes approaches to the truth; yet its results have often some degree of apparent certainty. Nevertheless, the facts on which such calculations are founded are so vague, uncertain, and variable, that the results are not to be depended on, and sometimes the most inconceivable mistakes take place.

"The numerical method at once supposes and sanctions one of the greatest errors in therapeutics,—namely, the adoption of absolute and exclusive measures. The celebrated problem of Pickairn—"For a given disease to find the remedy"—is only reasonable, when understood in this way—"For a given indication, to find the best method of fulfilling it." Each individual malady is not a simple phenomenon that can be represented by unity; it is not certain and fixed, but constantly varying. Thus the pneumony of to-day is not the pneumony of yesterday, and the pneumony of Peter is not that of Paul.

"As an illustration, consider how disappointed the young physician is in passing from a lecture or a didactic work to the bed-side of the patient; and this because he is transferred from disease in the abstract to its reality. Take any large collection of cases: consider the epidemics of Hippocrates, the constitutions of Baillou, the letters of Morgagni, the consultations of Hoffmann, the *ratio medendi* of Stork, &c.—how many cases will you find alike? The universally admitted law of idiosyncrasy and of individuality, so infinitely variable, cannot be included in any calculation of probabilities. Let us first examine how the numerical method applies to a man in a state of health. Let us take two hundred healthy adults, of the same sex, age, profession, and condition: how many shall we find in exactly the same condition, so that we may say, "this health and that health make two?" Or let us take their powers of intellect or of digestion: how many are alike in their intellect? how many have identical digestive powers? When the different series of uniform intellects and digestive powers have been made out, a separate and universal method of treatment for each series has to be invented; and how will you succeed in this?

"Let us again suppose that there are in childbed, under the same circumstances, say a thousand women, and that the news of some grievous calamity is brought them; five of them may become deranged, and the other 995 not have their reason affected. In calculating probabilities, it is an easy matter to determine this. But will any physician be therefore satisfied that he may announce a piece of bad news to a lying-in woman without danger? Or let a thousand men, in a state of violent perspiration, drink a given quantity of ice-cold water: ten are seized with pneumony, five with gastritis, and five with dysentery, while all the rest remain in perfect health.

"But from theoretical grounds let us come to facts, and take typhoid fever, of which term, by the by, I do not at all approve; for, under it, gastric affections, bilious fever, entero-mesenteric fever, mucous fever, catarrhal fever, &c. are confounded. It was this that led to that inextricable chaos of difficulties in your late discussion on that subject. The mistake was, that by the name of typhoid fever was designated a certain peculiar morbid state, which may be a dangerous termination, or a troublesome complication, of almost all other diseases. Thus pneumonia, apoplexy, peritonitis, uterine phlebitis, phthisis in adults, surgical operations, &c. occasionally terminate with typhoid symptoms.

"Still more so is this the case with bilious, catarrhal, and inflammatory fevers,

which, according to my experience, all commence like typhoid fevers; and, though I have seen a great many cases, I have never seen typhus come on primarily, but always preceded by nervous or febrile reaction, such as biliousness, an affection of the stomach, &c.

"And here I may remark, that I think it one evil of the present state of medicine, that our experience is too exclusively that of hospitals. We thus only see one condition of life, and the disease already established, and can seldom retain the patient long enough to see all the steps by which health is gradually re-established. It is in these patients, in whom we never see the commencement of the disease, that we meet with the most marked cases of typhoid fever.

"Well, then, in this same typhoid fever, can any unique, absolute, and exclusive treatment be assigned? If the practice of medicine did not already do so, sound logic would give a negative reply. When we consider the infinite modifications of circumstances, the degree of strength, the state of the nervous system, the moral condition, the idiosyncrasy, the age, the sex, the country of the patient, the nature, period, and prevailing character of the disease, &c. &c., we see how impossible it is that any employment of figures, any calculation, however nicely balanced, should lead to any uniform method of treatment. I have in another place shewn, that, in the opinion of Lacroix, Laplace, and Condorcet, reasoning, logic, and induction, are in medicine not less useful, or less certain, than numerical calculations: even in geometry, in almost all points, calculation has hitherto only proved what reasoning had already suspected. "Theory," said Laplace, "is only common sense applied to calculation." The different influences modifying disease, to some of which I have alluded, are no less numerous, for example, than the letters of the alphabet. Yet, consider the richness and variety of language formed out of these letters; by that you may form an idea of the variety of the circumstances attending disease: or, to push the analogy still farther, there are in the alphabet certain elements of more importance than the rest; in like manner disease has, so to speak, its vowels and its consonants.

"For myself I must say, that the more I see of disease, the more does each case appear to me a new and a separate problem. When they see a new case, how many physicians can put down in figures the number of cases exactly similar which they have treated? I therefore think, that the useful results to be obtained from statistical calculations, in the treatment of typhoid fever, must be reduced to this: that we may usefully register the relative indications in cases within our own practice, and under given circumstances, of blood-letting, evacuations, tonics, &c. But the numerical method can never point out the treatment to be adopted in any one given case.

"But the numericalists, finding the subject of typhoid fever difficult ground on which to fight, have taken the case of intermittents. With regard to intermittent fevers, however, we must not judge by those of the capital: first, because cases are rare in this country; and, secondly, because they yield easily under almost any means that are employed. It is in countries to the south that they are violent; and I may remark, in passing, that this is another instance of the complexity of disease in general.

"But even in this country I have cured intermittents by the most different modes of treatment!—by local and general bleeding, by emetics, by purgatives, &c.; and if we examine the history of medicine, which, when well understood, is the best instruction that a physician can receive, we shall find that intermittent fevers, whatever may be their type, vary constantly in nature and in character, and yield to many different modes of treatment.

"From all this it by no means follows that there are not in medicine certain general views, and fixed principles; on the contrary, in the treatment of every case we act upon them. They are precisely the views taught by the beautiful doctrine of indications, which can alone guide us in the treatment of fevers, and of diseases in general. The doctrine, then, to which I have been led by my own experience, and by the history of medicine, and which I have always held and advocated, is that of *eclectism*.

"Its methods are analysis and induction; its aim, the wide and complete interpretation of facts; its result, the understanding of indications, with the knowledge of the best modes of fulfilling them. In short, it is the logic of facts, enlightened by the logic of thought. Yet to many this method is unpalatable: some are too

impatient, some too indifferent; while others are incapable of pursuing continued trains of reflection. I am led, then, by my long and unwearied labours on this subject, to the following results:—

"1. Individuality is an invariable element in pathology. A disease is not a simple, fixed, and uniform entity; it is a series of varied and changing actions; therefore every exclusive theory is absurd in pathology, and every absolute method repugnant to therapeutics.

"2. Numerical and statistical calculations, open to many sources of fallacy, are in no degree applicable to therapeutics.

"3. The only methods admissible in practical medicine are those of analysis, logic, and induction."—*Gaz. Médicale*, and *Lond. Med. Gaz.* for May 13, 1837.

47. *Bastardy in England and Wales*.—It appears from the population returns (1831), that 20039 bastards (10147 males, 9892 females) were born in England and Wales in the year 1830. In the same year 382060 baptisms were registered; illegitimate children therefore formed 1 in 19 of the children baptised; and if the number of *unmarried* women at a child-bearing age be compared with the number *married*, it will be immediately perceived that for their numbers they contribute a considerable share to the population of the country. The actual population of the country (14270000) contains—if their lives are as long as other people's, and the proportions have continued the same—751000 persons illegitimately born.—*British Annals of Medicine*, Sept. 1, 1837.

48. *Bastardy in Prussia*.—We have just seen an elaborate statistical return of bastardy in Prussia for the 15 years, 1820 to 1834. The greatest number of illegitimate children are born in Berlin; they amount to 1435 annually, the population having been 250000. For 1000 inhabitants 5.74 bastards were annually born. In the same period there were to 100000 inhabitants, on an average, 20354 females aged 14 and upwards; 1 in 35 had a natural child; in the regency of Munster, in Westphalia, there were, in the same number of inhabitants, 17720 females above 14, and 1 bastard to 278 of their number. In Berlin, 1834, there were only 13.34 married females in 1000 inhabitants. Of 1000 inhabitants in the mountains of Silesia (1834) there were 196.37 married females in 1000 inhabitants, and 3.82 bastards were born annually (1820-34).

MORTALITY OF ILLEGITIMATE CHILDREN IN PRUSSIA.

| In Prussia, 1830-34. | Total Born. | Still-born. | Still-born per 100. | Died in the year of 100 born alive. |
|------------------------|-------------|-------------|---------------------|-------------------------------------|
| Legitimate children, | 7066525 | 230546 | 3.27 | 17.12 |
| Illegitimate children, | 526492 | 26522 | 5.01 | 25.28 |

This shows that bastards born alive are exposed to greater dangers than legitimate children; 25 per cent. of the former class die in the first year, while but 17 out of 100 children born in wedlock die in the same time. The illegitimate *fœtus* incurs still greater dangers in utero; 54 per cent. more perish before birth than among the class of legitimate children.

Of the children born alive in Prussia 7.3 per cent. are bastards; of the children born alive in England only 5.3 per cent. are illegitimate. In Wales the proportion is higher than in Prussia.—*Ibid*.

MISCELLANEOUS.

49. *Account of a man who submitted to be buried alive for a month, at Jaisulmer, and was dug out alive at the expiration of that period*.—The following extraordinary narrative by H. M. Twedell, Esq., published in a recent No. of the *India Journal of Medical and Physical Science*, we consider worthy a place in our pages, though we are not aware of what degree of credit is to be attached to it.

"I have just witnessed a singular circumstance, of which I had heard during our stay at this place, but said nothing about it before, the time for its accomplishment not being completed: this morning, however, the full month was over, and a man who had been buried all that time, on the bank of a tank near our camp, was dug

out alive, in the presence of *Esur Lal*, one of the Ministers of the Muharawul, of Jaisulmer, on whose account this singular individual was voluntarily entered a month ago. He is a youngish man, about 30 years of age, and his native village is within five kos of Kurnaul; but he generally travels about the country to Ajmeer, Kotah, Endor, &c. and allows himself to be buried for weeks or months, by any person who will pay him handsomely for the same. In the present instance the Rawul put this singular body in requisition, under the hope of obtaining an heir to his throne, and whether the remedy is efficacious or not, it certainly deserves to be known.

The man is said, by long practice, to have acquired the art of holding his breath by shutting the mouth, and stopping the interior opening of the nostrils with the tongue; he also abstains from solid food for some days previous to his interment, so that he may not be inconvenienced by the contents of his stomach, while put up in his narrow grave; and moreover, he is sewn up in a bag of cloth, and the cell is lined with masonry, and floored with cloth, that the white ants and other insects may not easily be able to molest him. The place in which he was buried, at Jaisulmer, is a small building, about 12 feet by 8 feet, built of stone: and in the floor was a hole about three feet long, two and a half feet wide, and the same depth, or perhaps a yard deep, in which he was placed in a sitting posture, sewed up in his shroud, with his feet* turned inwards towards the stomach, and his hands also pointed inwards towards the chest. Two heavy slabs of stone, five or six feet long, several inches thick, and broad enough to cover the mouth of the grave, so that he could not escape, were then placed over him, and I believe a little earth was plastered over the whole, so as to make the surface of the grave smooth and compact. The door of the house was also built up, and people placed outside, that no tricks might be played, nor deception practised. At the expiration of a full month, that is to say, this morning, the walling up of the door was broken, and the buried man dug out of the grave; Trevelyan's moonshee only running there in time to see the tipping open of the bag in which the man had been inclosed. He was taken out in a perfectly senseless state, his eyes closed, his hands cramped and powerless; his stomach shrunk very much; and his teeth jammed so fast together, that they were forced to open his mouth with an iron instrument to pour a little water down his throat. He gradually recovered his senses, and the use of his limbs, and when he went to see him, was sitting up, supported by two men, and conversed with us in a low, gentle tone of voice, saying, "that we might bury him again for a twelvemonth if we pleased." He told Major Spiers, at Ajmeer, of his powers, and was laughed at as an impostor; but Cornet Macnaghten put his abstinence to the test at Pokhur, by suspending him for thirteen days, shut up in a wooden chest, which, he says, is better than being buried under ground, because the box, when hung from the ceiling, is open to inspection, on all sides, and the white ants, &c. can be easier prevented from getting at his body, while he thus remains in a state of insensibility. His powers of abstinence must be wonderful to enable him to do without food for so long a time, nor does his hair grow during the time he remains buried.

I really believe that there is no imposture in the case, and that the whole proceeding is actually conducted in the way mentioned above.

This letter was written by Lieut. A. H. Boileau, of the Engineers, first assistant Great Trigonometrical survey, who at that time was employed in the survey of that part of the country. The gentlemen, whose names are mentioned in the letter, are Capt. Trevelyan, of the Bombay Artillery, and Cornet, now Lieut. Macnaghten, of the 5th regiment light cavalry, assistant to the agent to the Governor-General in Rajpootanah.

Some other information I obtained in the course of conversation with Lieut. Boileau, and which I noted down. Lieut. Boileau was unacquainted with the man's name or cast; he believed that he had taken up the life of a Fakcer; he understood that the man had been buried six or seven times, but whether for any period longer than a month he knew not; he did not hear how the man discovered his powers, or when he commenced to practise them. Lieutenant Boileau arrived at Jaisulmer, after the interment, and saw the place, described in his letter, in which the man was buried. There was a guard of four or five Chuprasees, in

* Query feet, the word as used in that part of India, is *gor*, and means foot or leg.

the employ of the maharâwul, as he understood, who were on the watch, to prevent any interference or imposition. The process of burying, and of disinterring was conducted in the presence of Esur Loll, one of the ministers of muharâwul. The day fixed for the interment was known to Lieut. Boileau, but not the exact hour. Captain Trevelyan's moonshee, who had set forth to give intelligence when operations were to be commenced, arrived only in time to see the people ripping open the cloth, or shroud, in which he had been inclosed. The moonshee immediately started off to a man to inform his master, and Lieut. Boileau, who were in their tents, at a distance of about three furlongs.

They waited a few seconds to apprise Lieut. Mackeson, of the 14th regiment, N. I. British Agent for the navigation of the Indus (who had declined to accompany them,) and repaired to the spot as quickly as possible. Perhaps a quarter of an hour had elapsed, since the opening of the grave, before they arrived. The people had thrown a clean cloth over the man; two of them supported him; he presented an appearance of extreme emaciation and debility; but weak as he was his spirit was good, and his confidence in his powers unabated, as in answer to Lieut. Boileau's and Captain Trevelyan's inquiries, he said "*that we might bury him again for a twelvemonth if we pleased.*" Lieut. Boileau examined, and measured with his walking stick, the grave in the floor of the chamber in which the man had been buried, and also the two slabs of stone which had been used to cover the mouth of the grave. For seven or eight days preceding the burial, the man lived entirely upon milk, regulating the quantity so as to sustain life, whilst nothing remained to give employment to the excretory organs. In that state he was buried. He confesses to have great dread of the white ants. Several folds of cloth were spread on the bottom of the grave, to protect him from their attacks. On taking nourishment after his release, he is said to be in a state of anxiety, until he has ascertained that the powers of his stomach and intestines are not impaired. Lieut. Boileau saw nothing more of the man; he understood that he regained his strength, and was for some time in attendance at the durbar of the Muharâwul, in the hope of receiving his promised reward, and that tired of waiting until the purse strings of the patron were loosened, he had stolen a camel and decamped.

50. *Lithotripsy in Russia*.—M. HEURTELoup, by invitation of the Emperor of Russia, visited St. Petersburg in May last, and gave public demonstrations of the operation of lithotripsy on cases of stone, which had been collected in the hospital for the purpose of illustration, and the Russian surgeons were thus instructed in the several stages of the process. In the middle of June, Dr. H. proceeded by request of the Emperor, to Moscow, where 34 cases of stone were collected by the authorities, and where the provincial surgeons were marshalled to receive the expected tuition.—*Lancet*, August 5, 1837.

51. *Animal Flower*.—The inhabitants of St. Lucia have discovered a most singular plant. In a cavern of that isle, near the sea, is a large basin of water, which is brackish, and its bottom composed of rocks; from these proceed beautiful flowers of a bright shining colour, and nearly resembling our marigolds. These seeming flowers, on the approach of a hand, retire, like the sulid, out of sight. On examining their substance closely, there appears in the middle of the disk four brown filaments resembling spiders' legs. These legs have pincers to seize their prey, and upon seizing it, the yellow petals immediately close. The body of the animal is about the size of a raven's bill.—*Lit. Chron.*

AMERICAN INTELLIGENCE.

Case of Hepatic Abscess opening into the right lung, with a post-mortem dissection. By JOSEPH PEACE, M. D.—Abscess of the internal structure of the liver may be regarded, both in this country and in Europe, as rather a rare termination of hepatitis. Louis, in his “*Mémoires Anatomico-pathologiques*,” found but five examples of abscess of the liver in four hundred and thirty subjects, all the organs of which he attentively examined. A full detail of these cases is recorded with their different complications, no one of which, however, was found to communicate with the lungs. Reference to the medical periodicals of late years has not enabled me to find recorded, by an American physician, a single case of hepatic abscess opening into the lung. Professor Horner, whose anatomical and pathological dissections have been so extensive, has never met with a case; and I believe the Wistar Museum, so rich in rare preparations of morbid anatomy, is without a specimen of this kind.

Twining, in his work on Diseases of Bengal, remarks, that the proportion of patients who recover after the formation of extensive abscess of the liver, is “lamentably small.” He has recorded with the autopsies, two interesting cases of hepatic abscess opening into the lung, both of which proved fatal. Dr. Phillips Wilson, in speaking of abscess bursting into the cavity of the thorax, remarks, “there is, perhaps, no instance of recovery after such an accident.” This observation has been contradicted by several cases recorded by European pathologists, of recovery after such a result. There is reason, however, to suspect that some of these cases may have been mistaken for obscure pneumonic abscess or purulent bronchial expectoration coexisting with hepatic inflammation or abscess, without any direct communication.

A case somewhat similar to the present, occurred in the Pennsylvania Hospital more than a year since, the diagnosis of which was so equivocal as to have led to great doubts as to the source of the copious expectoration, which shortly preceded the death of the patient. The autopsy, (which it is to be regretted has not been published,) revealed an abscess of the liver, communicating with the right lung.

Mrs. S. W. C., æt. 48, had been confined to bed two weeks previously to my first visiting her; had laboured under symptoms of fever, attended with occasional chills; furred tongue; head-ache; sick stomach; hot skin and pain in right side; had been purged freely and taken two emetics, which produced copious bilious vomiting. Quinine had been ineffectually given to check the chills.

August 23d, 1837. I was consulted and found, in addition to the above, other symptoms indicating hepatic disorder. The pulse was full without tension, and 100. The adnata of the eye, and skin of face and breast tinged with a yellowish hue; bowels costive; taste bitter. Pressure over the right region of the liver increased the dull pain frequently experienced there; a tormenting pain was felt, particularly at night, in the right shoulder; no cough; no obvious enlargement over the region of the liver. Ordered a mercurial purge; nitrous powders. Diet, barley-water.

From this period the patient was treated for remittent fever, implicating seriously the functions of the liver. In the progress of the disease she suffered from chills, followed by profuse sweats, irritable stomach, &c., which much

exhausted her muscular strength. Among other remedies, she was leeches and blistered over the epigastric and right hypochondriac regions. The sulphat quiniæ was endermically applied with the effect of arresting the chills. Small doses of calomel, ipecac. and opium produced slight ptialism, and with it an apparent amendment of the febrile symptoms; her tongue now became moist and cleaner; pulseless frequent; skin less jaundiced; alvine evacuations more healthy. She was now able to take an infusion of cherry bark and chicken broth. This favourable change was of but short duration, the febrile symptoms were now exacerbated towards the evenings; tongue became dry and coated with a dark brownish fur; and she experienced a recurrence of very severe chills. She was now again restricted to gum arabic mucilage, and was put under alternative doses of calomel and ipecac.; her pulse became more frequent, 120 to 130; and the fever assumed the hectic character. She complained much of flatulence, sick stomach, and a very severe pain in the right iliac region, which frequently came on suddenly, and as suddenly left her. Sinapisms, warm applications, &c., were applied without affording material relief. Her skin became dry and harsh; no night sweats; very restless at night.

September 23d. On my visit in the afternoon I was informed by the daughter that her mother had been seized with a rattling in her throat, which was immediately followed by a suffocating cough and very copious expectoration, which lasted continuously for nearly an hour. The sputa presented a thin, purulent, and straw coloured appearance; and so offensive was its odour as to produce nausea, both in the patient and her attendant. The expectoration entirely ceased about 4 o'clock, p. m., and did not return until next morning at 11, and again ceased in a half hour.

25th. Cough returned at 2, p. m.; expectoration much less offensive and copious, and partakes more of the muco-purulent character.

26th. No cough or expectoration all day; can take a deep inspiration without cough or pain.

27th. Cough returned; sputa contains apparently shreds of lymph.

28th. Entertaining but little doubt as to the diagnosis, and considering it an interesting case of hepatic abscess opening into the lung, I invited Drs. Pepper and E. Pease, to examine it with me. The patient expressed herself as feeling more comfortable since her expectoration. Ordered essence of beef and wine whey to be freely given.

29th. No material change; pulse very frequent and weaker.

30th. We found her extremely restless, having passed a distressful night, occasioned by the severe pain in her side, just above the right ileum. This pain was increased by pressure or change of position. Inability to lie on her left side precluded an examination of her thorax by auscultation. At night an anodyne enema of morphine was administered, which procured for her a refreshing sleep, occasionally interrupted by cough.

October 1st. Evidently sinking, as evinced by her anxious countenance, quickened respiration, and feeble pulse; stomach irritable, and pulse very small, feeble, and frequent. She consented reluctantly to lie on her left side for a few moments, to afford an opportunity to examine the respiration. The result was, the detection of cavernous respiration at the base of the right lung, and slight pectoriliquy.

The essence of beef and wine whey were continued, with occasional anodynes, to calm nervous irritability. 10 o'clock, p. m., died.

To Dr. Pepper, who assisted at the autopsy, I am indebted for the subjoined account of the morbid appearances presented fourteen hours after death.

"The sternum, with the cartilages of the ribs, when elevated, presented the convexity of the diaphragm, much distended and compressing the right lung. A small puncture made into the diaphragm, at its most prominent point, gave

issue to at least 3x. of greenish pus, having but little odour. By extending the opening, it was ascertained that the abscess was formed in the substance of the liver, which was united to the diaphragm by strong adhesions. No communication could be detected between this cavity and the lungs. Another abscess was found in the liver immediately below the diaphragm, it contained but little pus, and communicated with the lower lobe of right lung by several ulcerated openings through the diaphragm. The largest of these openings was one half inch in diameter. Both these cavities were of an irregular shape, and lined by a false membrane. They were traversed by a number of large vessels, which were nearly obliterated, but not destroyed, by the ulceration. The liver, near the cavities, was red and soft; but the rest of its substance was healthy, nor was it increased in size. The gall-bladder contained healthy bile. The right lung was now removed in conjunction with the diaphragm, liver, and stomach. The lower lobe of right lung was perfectly hepatized and adherent to the diaphragm. In its most dependent part was a cavity about one inch in diameter, and lined with a firm cartilaginous membrane. It communicated with the abscess of the liver; several small bronchial tubes terminated in it; and by slight pressure air was made to pass from the lung into the liver. The bronchial tubes and branches of the pulmonary artery, in the lower part of same lung, were inflamed; several small metastatic abscesses existed in different parts of the right lung under the pleura pulmonalis. The right pleura contained about 5vij. of troubled serosity; stomach adherent to liver; its mucous membrane was slightly thickened; but of good consistence. The peritoneum was thickened throughout; in many parts coated with false membrane of a yellow colour; and its cavity contained about 5x. of turbid greenish liquid. In the loose cellular substance, between the caput coli and the right iliac fossa, was an abscess, the sides of which were formed by thick cartilaginous membrane, and its diameter was about two inches. A pin, rusty and black, and an inch and a half long, was found in the centre of the pus, with which the abscess was filled. No communication existed between this abscess and the intestine, nor could any traces of previous ulceration of the intestine be seen. The other viscera were healthy."

Case of Amputation of the Foot. By G. R. B. HORNER, M. D., Surgeon U. S. N.—On the 9th of last July, John M'Mahon, æt. 29, a sailor, belonging to the U. S. Frigate United States, was employed in the duty assigned him while she was beating through the Straits of Gibraltar. Imprudently having put his left foot into the coil of a topsail brace while the ship was tacking, it was entangled, when the brace was suddenly drawn through the block, by the swinging of the yard; he was dragged violently along to the block, and being unable to extricate his foot had it torn off at the instep. The parts torn away consisted of the phalanges, the metatarsal bones, and the middle and external cuneiform with the integuments, the extensor longus pollicis, and the extensor and flexor digitorum communis pedis muscles, which were almost entire; the tendons having come out unbroken, and bringing with them many of the muscular fibres. The tarsal bones left were stripped of integuments, the muscles of the sole of the foot were awfully mangled and the arteries being ruptured were retracted and bleeding slowly. He was taken below, where, assisted by Drs. Barington and Elliott, I performed the following operation as soon as preparations could be made. A dose of laudanum and some wine having been given to hasten reaction and lull pain, I amputated with a scalpel the internal cuneiform bone, the cuboides and naviculare, took up the bleeding arteries, which were very difficult to be found, cut across the ragged muscles to make a smooth stump, and then having sponged and dried the parts proceeded to dress the wound. The integuments were brought as near together

as possible by adhesive strips; compresses were applied over them, and the whole secured by a bandage. A splint was next fixed by another bandage to the back of the leg and ankle to keep the heel in its place. The patient was then placed in a cot and the limb put upon pillows. Being in much pain, a grain of sulphate of morphia was dissolved in an ounce of water, and given in divided doses. The next day, to prevent febrile action and do away with any tendency to tetanus, epsom salts were given. *R.* tart. antimonii grs. ij.; tr. opii. denare. 5ij.; pulv. gum arab. 5ss.; aq. fluv. ʒviiij. On the fourth day after the accident the dressings were removed. Suppuration being very profuse and the fætor considerable, the stump was sponged with Labarraque's solution of chloride of soda, and redressed. I continued to treat him locally and constitutionally; the stump healed rapidly; new skin was formed; granulations sprung up and covered the exposed extremity of the astragalus; no alarming symptoms occurred, and by the 23d of August he was so near well that he was sent aboard the *Potomac*, at Athens, to return home, and given the certificate required for the procuring of a pension. I have just received a letter from Dr. Dodd, surgeon of that ship, informing me that in a few days the healing process will probably be completed.

It may be thought by many that the wound being a lacerated one of the worst kind, it would have been more proper to have amputated either the leg or the thigh. This I thought of doing, but the youth and soundness of constitution of the patient, his unwillingness to lose the limb and the little inconvenience he might experience from losing only a part of the foot, determined me to adopt the above practice, which I certainly have no reason to regret.

Scirrhus of the Liver and Pylorus, terminating in ulceration, effusion into the abdominal cavity, peritonitis, and death. By S. LITTELL, Jr., M. D.—The case is chiefly remarkable as having been, at one time, mistaken for aneurism of the descending aorta, with which it certainly possessed several symptoms in common. The patient, aged 52, of moderate stature, temperate habits, and general good health, first observed a pulsating tumour in the epigastric region, a little to the left of the median line, in March of the present year, and was induced to apply for relief to a Thompsonian charlatan. The customary routine,—"number two" to "number six" inclusive, emetics of lobelia, sweating, &c.—was employed by this pretender, and continued during a period of six weeks, with increase of the tumour, and aggravation of all the symptoms. At the close of this process, he came under the care of a physician, and, the obscurity of the case exciting some interest, was seen by several practitioners. A consultation was finally held, the disease pronounced to be aneurism of the aorta, and the unfortunate sufferer, receiving no encouragement from his medical advisers, eagerly grasping at every thing which flattered him with the hope of recovery, and ignorant perhaps of the consequences of his temerity, was again persuaded to make trial of a preparation recommended by one of the nostrum-venders, which infest our city. It proved to be an alcoholic infusion of rhubarb and gentian, and he had been using it daily about two weeks, when I visited him, at the instance of Mr. Grall, a neighbouring apothecary, who kindly offered to furnish, gratuitously, any medicines which might be required. His pulse, at this time, was small and feeble, his inferior extremities cool, and he was evidently in a state of much prostration—circumstances which were satisfactorily explained, by a profuse hemorrhage from the bowels, which he said had twice occurred while taking the nostrum just mentioned. On the left of the epigastrium, was a tumour, hard, round, and well-defined; painful upon pressure, and attended with a very evident pulsation. It was situated directly in the course of the descending aorta, and at first view, might readily have been mistaken for an aneurism of that vessel; the patient asserted his belief of

its connexion with the heart, from a sense of constriction which he experienced, as of a cord passing to that organ; and stated, moreover, that the cardiac pulsation had disappeared as the throbbing of the tumour increased. He complained principally of great tenderness on pressure, involving the tumour, and extending through the right hypochondrium towards the spine; a burning sensation, subject to occasional exacerbations, in the stomach; and pain in the right shoulder and scapula. His pulse though weak, was slow and regular, there was no nausea or vomiting, and he was entirely free from fever. His bowels were generally constipated, and he was habitually troubled also, with coldness of the lower extremities. Such were the prominent symptoms which presented themselves on the first examination, and I might, perhaps, have fallen into the error of my predecessors, had not the probable advance of the disease, since the announcement of their diagnosis, rendered such a mistake less venial than on that occasion. I could distinctly trace the liver, enlarged and indurated, stretching from the tumour through the epigastric, into the upper part of the right iliac region; and this circumstance, in itself conclusive, together with the pain of the shoulder, the absence of bile in the alvine evacuations, and the tenderness on pressure, sufficiently indicated the suffering viscus. I stated my opinion accordingly, to a medical gentleman whom I accidentally met at the house, and subsequent investigation induced me to modify it only so far as to admit the co-existence of chronic peritonitis in the vicinity of the tumour. The bleeding, which did not again recur, was supposed, in the absence of any more probable cause, to have arisen from some hemorrhoidal tumours. The condition of the patient at this late stage, precluded the employment of any active measures,—an alterative mercurial plan, frictions with a liniment containing iodine and the unguentum hydrargyri, leeches, and fomentations with cloths wrung out of a decoction of stramonium, a light demulcent diet, and occasional laxatives and enemata, constituted the whole of the treatment; which was regarded as merely palliative—the increasing weakness and progressive emaciation, sufficiently indicating the fatal character of the malady.

With the exception of one or two rigors, followed by temporary reaction, matters continued in this state for the space of nearly two months; the patient was able to move about his chamber, the digestive functions were well performed, and although no impression was made upon the disease, he was decidedly more comfortable than he had previously been:—when, early on the 7th inst., I was hastily summoned to his house, and found him with all the symptoms of acute and general peritonitis—excessive tenderness of the whole abdomen, a small and frequent pulse, cold extremities, and a countenance expressive of intense anguish. It was clear that there had been effusion of some kind, into the peritoneal cavity; and though the system rallied somewhat, after the vehemence of the shock had passed, he gradually sank, and finally died on the morning of the 15th inst. During the two or three days immediately preceding the fatal termination, there were repeated evacuations, both upwards and downwards, of a purulent and extremely offensive fluid.

The autopsy was performed a few hours after death, in the presence of my friends Drs. I. Parrish and Wiltbank. The internal surface of the peritoneum was universally adherent to the abdominal viscera, with the exception of the portion covering the epigastric, and part of the umbilical region, which was separated from the parts beneath, and formed the anterior wall of an irregular cavity, containing about a quart of sero-purulent fluid. The tumour which had attracted so much attention during life, was ascertained to be the left lobe of the liver, enlarged, indurated, and converted into one entire mass of

scirrhus; no trace of healthy structure remaining. A similar degeneration involved the whole of the inferior portion of the right lobe. Smaller masses of scirrhus matter, were found also in other parts of this organ; appearing on either surface, or being more deeply embedded in its structure. The liver was enlarged to nearly twice its natural size, and the lobulus Spigelii was the only division which could be pronounced quite healthy. The agglutination of the intestines to each other and to the peritoneum, the displacement of the viscera, and the adhesions connecting every part blending the whole in one confused mass, rendered the subsequent steps of the examination somewhat more difficult. The stomach was pressed towards the left hypochondrium, and the pylorus, closely adherent to the inferior surface of the left lobe of the liver, was situated behind, and on a level with, the umbilicus. The pyloric portion of this organ, was converted into a hard, irregular, scirrhus tumour, about the size of a lemon, which had assumed the ulcerative process on its inner surface, and the ulcer, after throwing out a fungous excrescence, had finally perforated the peritoneal covering. The gall-bladder was thickened, empty, and contracted; the spleen, pancreas, and kidneys, quite sound; and the lungs unusually healthy—there being only a slight adhesion to the pleura of the right side. The heart was evidently smaller than natural, but the several parts bore a due proportion to each other, and its structure was perfectly healthy.

The immediate cause of death was now apparent:—through the ulcerated opening in the pylorus, the secretions of that part, and the contents of the stomach also, were extravasated into the abdominal cavity; giving rise to peritonitis with sero or lympho-purulent effusion. An effort had been made by nature to circumscribe the extent of the effusion; and the fluid, accumulating in the vicinity of the ulcer, found its way into the stomach, and constituted the offensive discharge already noticed as having occurred during the latter part of the patient's existence. Other symptoms also, which have been cursorily mentioned—the general feebleness of the circulation and coldness of the inferior extremities, the sense of constriction, and the intestinal hemorrhage—find their explanation in the smallness of the heart, the displacement, and disease of the stomach.

Philadelphia, August 22, 1837.

Case of Suicide in a Child. By ISAAC PARRISH, M. D.—I was called in haste to visit a child in the family of J. S., a respectable gentleman residing in my neighbourhood.

On my arrival at 3 P. M., I found on going into the chamber of my patient, that death had occurred. The patient was a girl in her fifteenth year, who had been carefully brought up by the family, with whom she had lived between seven and eight years. She had generally enjoyed good health, with the exception of occasional attacks of sick stomach and head-ache. She had just passed the age of puberty, and possessed a docile disposition. Her situation in life, as far as could be ascertained, was in every respect agreeable, and congenial to her wishes.

On the morning of the day of her death, she was engaged as usual in the domestic concerns of the family, until eight o'clock, when she was observed in the yard, vomiting, and appeared languid and sick. She was taken to bed, and various simple remedies were resorted to by the family to relieve the vomiting, which appeared to produce a temporary effect. She did not complain of pain, nor did her friends apprehend any danger from her symptoms until I was sent for. She had two copious evacuations from the bowels in the course of the morning. A few minutes previous to her death, she raised her head over a basin to vomit, after which she turned upon her side and expressed herself as feeling better. Her attendant thinking that she was disposed to sleep, left the

room, and on returning in the course of half an hour, was alarmed at her appearance, and immediately sent for me. When I arrived she was lying in the position stated, perfectly lifeless.

I enquired into the history of the case as minutely as was rendered proper in the agitated state of the family, but could discover no clue, which would lead to the explanation of so sudden and unexpected a catastrophe.

I determined to defer further enquiries until the next day, when the alarm should in some measure have subsided.

On my next visit, I was informed, that early in the morning of the day in which the patient died, she had held a conversation with a little girl residing in the next house, in which she mentioned having lately read in the newspaper of a man, who had been unfortunate in his business, and had taken arsenic to destroy himself. She also spoke of the apothecary shop near by, and said she frequently went there.

The narration of this conversation, afforded strong suspicion to my mind, that she had committed suicide, a suspicion which was strengthened by the fact, that a few months previous I had been called upon to visit a person residing in the same house, who had suffered for some years under mental derangement, and had recently been discharged from the Insane Hospital near Frankford; he had taken laudanum, with the intent of destroying himself. He was, however, rescued by the early resort to emetics, by which free vomiting was induced, and the laudanum was discharged.

This circumstance would naturally produce a strong impression upon the mind of the child, which was increased, no doubt, by the reading of the case detailed in a newspaper. In this way, the desire to commit a similar act was kindled up in the mind of the deluded girl, and thus, by that inexplicable connexion, which, in some instances at least, appears to exist between the knowledge of such a horrible act, and the desire to perform it, she was almost irresistibly impelled to the deed.

A post-mortem examination was made the day following her death, in the presence of Dr. C. Evans. The abdominal viscera presented a healthy appearance externally. On laying open the stomach, we found a quantity of arsenic, weighing nearly $\frac{1}{2}$ ss., lying at the bottom of the organ. The mucous membrane of the stomach was intensely inflamed, as well as the upper portion of the bowels. The bowels were filled with a light-coloured fluid, resembling very much the "rice-water discharges" of cholera, and having a very peculiar odour. The appearance of the generative organs was natural.

A druggist in the neighbourhood was informed of the circumstance, who stated, that two days prior to her death, he had sold the deceased $\frac{1}{2}$ ss. of arsenic, for the purpose, as she said, of destroying rats, supposing that the youth and apparent simplicity of the purchaser was a sufficient guaranty that she had no evil designs.

This case is stated, as affording strong testimony in favour of a principle, which is now beginning to attract the attention of medical men, viz: that the publicity which is given to cases of suicide, in the newspapers, and by other means, forms one of the strongest incentives to the commission of the act, in those who have a secret disposition to destroy themselves.

If this be the fact, a high responsibility rests upon physicians, so to influence public opinion, and more especially editors, as to prevent the narration of the circumstances connected with the death of this unfortunate class. No good can certainly arise from the exposure of facts which ought to remain in the bosom of distressed families, while, there is reason to believe, the list of victims to suicide is annually very much swelled, from the course which is now so generally pursued.

Case of Urinary Calculus in a girl, successfully treated. By T. D. MUTTER, M. D.—About the 1st of January, 1837, I was requested by Dr. G. B. Davis to meet him in consultation on the case of a little girl, nine years of age, who had been brought to the city to be treated for an affection of the bladder. She had been labouring under the disease for more than a year, and had submitted to various remedies during that period.

From the history of the case I was convinced that it was one of stone; and accordingly on sounding her my prediction was verified. The stone seemed to be small and smooth, notwithstanding which she suffered excessively from irritation of the bladder, which was accompanied by the usual evidences of such a state of this organ.

Having ascertained the existence of the stone, the next course was to prepare her for some operation, by which its removal could be accomplished. A preparatory plan of treatment, similar to those usually employed in such cases was, therefore, commenced, and we had the satisfaction to find all the symptoms improving under it, so that at the end of the third week, we deemed her sufficiently reduced, and the bladder in a proper condition for the operation.

On the 22nd of January, assisted by Dr. Davis, and in the presence of her father, I extracted the stone by the following operation. Having placed her in the usual position for lithotomy, I introduced into the bladder a small, straight, and deeply grooved sound. The groove looking directly upwards, as recommended by Dubois. Then with a straight probe pointed bistoury, the point of which was accurately adapted to the groove in the staff, I incised the urethra freely towards the arch of the pubis. The instruments were then withdrawn, and a small pair of curved fenestrated forceps introduced; with them the stone was readily seized and extracted. The operation occupied about a minute; gave but little pain, and was attended by the loss of a teaspoonful or two of blood.

The patient was then placed in bed on her left side, but she was not restricted to this position during the subsequent treatment.

Without going into a detail of the manner in which she was treated after the operation, I will merely remark, that no bad symptoms of any kind whatever resulted from it; that union by the *first intention*, between the lips of the incision, took place; that *retention of urine* was as perfect and complete as could be desired; and that the patient went home on the tenth day, perfectly cured.

Remarks.—There is certainly nothing original in the above case, but as it goes to settle a mooted point, I have thought its relation might prove in this way, at least, serviceable. Many of our most distinguished surgeons, ancient as well as modern, have laid it down as an axiom, that a division of the urethra in the female, is invariably followed by incontinence of urine; and, consequently, that the operation should not be performed.

For the most part, this injunction I believe to be correct, and I should myself adhere to it in all cases of the disease occurring in the adult; the advice of some distinguished French surgeons to the contrary notwithstanding. In young subjects, however, I should prefer a division of the urethra and neck of the bladder, to any other operation, and for the following reasons:—

In the first place it is decidedly the most easy of execution. 2nd. It has in three cases, (one of which occurred in the hospital practice of Dr. J. Rhca Barton,) been followed by *nothing like incontinence of urine*. 3d. It gives but little pain. 4th. There is no hemorrhage, or danger of any kind, when it is properly performed. And 5th. The cure is more speedily accomplished than by any other means.

Statement of Deaths, with the Diseases and Ages, in the City and Liberties of Philadelphia, during the year 1835.

| DISEASES. | Males. | Females. | Boys. | Girls. | Under 1 Year. | 1 | 2 | 3 | 10 | 15 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | Total. |
|--|--------|----------|-------|--------|---------------|-----|-----|-----|----|----|-----|-----|-----|-----|-----|----|----|-----|-----|--------|
| | | | | | | to | to | to | to | to | to | to | to | to | to | to | to | to | to | |
| | | | | | | 2 | 5 | 10 | 15 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | |
| Apoplexy | 37 | 34 | 5 | 3 | 3 | 1 | 2 | 1 | 0 | 1 | 7 | 11 | 12 | 5 | 10 | 13 | 2 | 0 | 0 | 71 |
| Atrophy | 66 | 36 | 59 | 42 | 17 | 31 | 14 | 4 | 1 | 1 | 6 | 1 | 5 | 3 | 1 | 1 | 0 | 0 | 0 | 112 |
| Abscess | 11 | 16 | 4 | 7 | 3 | 2 | 3 | 0 | 1 | 2 | 6 | 4 | 5 | 2 | 1 | 0 | 0 | 0 | 0 | 30 |
| Anemia | 5 | 1 | 3 | 4 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 9 |
| Asthma | 6 | 6 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 3 | 2 | 1 | 1 | 0 | 12 |
| Asphyxia | 8 | 6 | 7 | 7 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 14 |
| Aneurism of the Aorta | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 4 |
| Angina Pectoris | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 3 |
| Amenorrhœa | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Aphthæ | 5 | 4 | 5 | 4 | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Bronchitis | 98 | 73 | 83 | 59 | 53 | 30 | 29 | 6 | 0 | 0 | 1 | 1 | 3 | 3 | 8 | 2 | 3 | 0 | 2 | 171 |
| Burns | 15 | 23 | 12 | 12 | 5 | 6 | 7 | 2 | 2 | 1 | 2 | 3 | 3 | 3 | 0 | 3 | 0 | 0 | 0 | 38 |
| Consumption of the Lungs | 350 | 357 | 55 | 59 | 17 | 18 | 38 | 19 | 12 | 39 | 177 | 165 | 110 | 66 | 13 | 21 | 1 | 0 | 0 | 717 |
| Convulsions | 182 | 169 | 171 | 155 | 213 | 56 | 40 | 15 | 2 | 2 | 12 | 4 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 351 |
| Contusion | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Concussion of the Brain | 1 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| Spine | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 |
| Compression of the Brain | 3 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Cancer Oris | 6 | 5 | 6 | 5 | 1 | 2 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| Cancer | 6 | 20 | 5 | 1 | 0 | 0 | 1 | 5 | 0 | 0 | 1 | 1 | 5 | 6 | 6 | 0 | 1 | 0 | 0 | 26 |
| Uteri | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 5 |
| Croup | 77 | 51 | 76 | 18 | 56 | 16 | 40 | 10 | 1 | 1 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 128 |
| Congestion of the Brain | 11 | 6 | 5 | 5 | 1 | 3 | 4 | 2 | 0 | 0 | 1 | 1 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 17 |
| Lungs | 11 | 4 | 9 | 3 | 6 | 1 | 2 | 3 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 15 |
| Casualties | 17 | 4 | 6 | 3 | 1 | 0 | 3 | 3 | 0 | 2 | 7 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| Choleia Morbus | 11 | 16 | 6 | 8 | 7 | 2 | 3 | 1 | 1 | 0 | 3 | 2 | 1 | 2 | 1 | 2 | 2 | 0 | 0 | 27 |
| Infantum | 135 | 110 | 135 | 110 | 163 | 67 | 14 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 255 |
| Colic | 3 | 3 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 6 |
| Chorea | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Cramp of the Stomach | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Constipation | 2 | 1 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 |
| Child-bed | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| Caries | 1 | 2 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| of the Bones of the Ear | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Cachexia | 1 | 2 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Dropsy | 36 | 13 | 17 | 10 | 1 | 3 | 9 | 6 | 2 | 4 | 8 | 20 | 7 | 9 | 11 | 6 | 3 | 0 | 0 | 89 |
| in the Head | 110 | 104 | 105 | 103 | 77 | 68 | 12 | 17 | 5 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 214 |
| Breast | 27 | 28 | 11 | 10 | 1 | 1 | 8 | 5 | 0 | 2 | 3 | 10 | 7 | 1 | 8 | 2 | 0 | 0 | 0 | 55 |
| Heart (Pericardium) | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Debility | 85 | 95 | 62 | 65 | 118 | 5 | 0 | 7 | 1 | 0 | 1 | 6 | 7 | 7 | 12 | 9 | 1 | 1 | 1 | 178 |
| Dilatation of the Heart | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Disease of the Brain | 18 | 30 | 10 | 12 | 6 | 9 | 7 | 0 | 0 | 0 | 4 | 3 | 3 | 0 | 2 | 4 | 0 | 0 | 0 | 38 |
| Larynx | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Chest | 1 | 1 | 3 | 5 | 3 | 2 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 9 |
| Lungs | 3 | 1 | 2 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Heart | 21 | 19 | 8 | 6 | 7 | 1 | 0 | 5 | 2 | 1 | 5 | 3 | 3 | 5 | 6 | 0 | 0 | 0 | 0 | 40 |
| Aorta | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Spleen | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Liver | 4 | 6 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 10 |
| Stomach | 2 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 4 |
| Kidneys | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Bowels | 4 | 2 | 3 | 2 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| Hip Joint | 2 | 1 | 2 | 1 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Spine | 1 | 0 | 3 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Uterus | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Bladder | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 4 |
| Drowned | 56 | 7 | 13 | 3 | 0 | 1 | 1 | 2 | 9 | 3 | 13 | 23 | 5 | 1 | 3 | 0 | 0 | 0 | 0 | 61 |
| Drunkenness | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Dysentery | 58 | 56 | 40 | 31 | 19 | 19 | 17 | 16 | 2 | 1 | 5 | 9 | 8 | 1 | 1 | 7 | 5 | 0 | 0 | 114 |
| Decay | 2 | 3 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 5 |
| Diabetes | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Diarrhœa | 69 | 60 | 39 | 41 | 51 | 11 | 12 | 0 | 0 | 0 | 9 | 10 | 8 | 7 | 6 | 5 | 1 | 1 | 0 | 129 |
| Dyspepsia | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Epilepsy | 7 | 6 | 3 | 1 | 1 | 0 | 0 | 2 | 2 | 2 | 1 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 13 |
| Erysipelas | 6 | 9 | 1 | 3 | 5 | 2 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 1 | 1 | 1 | 2 | 0 | 0 | 15 |
| Exposure to Cold | 2 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 4 |
| Effusion on the Brain | 14 | 11 | 6 | 9 | 7 | 4 | 2 | 1 | 0 | 1 | 2 | 1 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 25 |
| Lungs | 1 | 3 | 0 | 3 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Eruptions | 2 | 3 | 2 | 2 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Enlargement of Mesenteric Glands | 4 | 1 | 4 | 1 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Carried over | 632 | 1104 | 1011 | 923 | 957 | 136 | 317 | 111 | 10 | 73 | 259 | 258 | 220 | 132 | 131 | 88 | 31 | 4 | 3 | 2956 |

| DISEASES. | Males. | Females. | Boys. | Girls. | Under 1 Year. | 1 to 2 | 2 to 5 | 5 to 10 | 10 to 15 | 15 to 20 | 20 to 30 | 30 to 40 | 40 to 50 | 50 to 60 | 60 to 70 | 70 to 80 | 80 to 90 | 90 to 100 | Total. | |
|---------------------------------------|--------|----------|-------|--------|---------------|--------|--------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|--------|-----|
| Brought over, . . . | 1632 | 1404 | 1011 | 923 | 957 | 330 | 317 | 111 | 46 | 73 | 280 | 298 | 220 | 132 | 134 | 88 | 34 | 1 | 3 | 305 |
| Empyema . . . | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Emphysema . . . | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| of the Lungs . . . | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fever . . . | 10 | 15 | 4 | 5 | 4 | 0 | 3 | 3 | 1 | 6 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 2 |
| Scarlet . . . | 135 | 170 | 134 | 168 | 23 | 48 | 139 | 75 | 12 | 5 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 30 |
| Remittent . . . | 21 | 20 | 3 | 11 | 1 | 2 | 7 | 2 | 2 | 0 | 9 | 6 | 3 | 2 | 6 | 1 | 0 | 0 | 0 | 4 |
| Intermittent . . . | 3 | 0 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bilious . . . | 15 | 10 | 3 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 11 | 7 | 4 | 4 | 3 | 1 | 0 | 0 | 0 | 23 |
| Typhus . . . | 15 | 15 | 1 | 3 | 0 | 0 | 0 | 0 | 2 | 2 | 7 | 7 | 4 | 4 | 3 | 1 | 0 | 0 | 0 | 30 |
| Puerperal . . . | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| Nervous . . . | 5 | 7 | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 2 | 2 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Brain . . . | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Putrid . . . | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Continued . . . | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Congestive . . . | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mesenteric . . . | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Inflammatory . . . | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Miliary . . . | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fracture of the Skull . . . | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Jaw . . . | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Neck . . . | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Leg . . . | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fistula . . . | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Fungus Hematodes . . . | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| of the Bladder . . . | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Gout . . . | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Gravel . . . | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hæmorrhage . . . | 21 | 16 | 6 | 2 | 5 | 0 | 6 | 1 | 1 | 6 | 6 | 11 | 4 | 2 | 2 | 1 | 0 | 0 | 0 | 40 |
| Hooping Cough . . . | 40 | 60 | 46 | 60 | 11 | 31 | 50 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| Hypertrophy of the Heart . . . | 7 | 7 | 2 | 3 | 2 | 0 | 2 | 0 | 0 | 1 | 4 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 |
| Hernia . . . | 2 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Inflammation . . . | 1 | 2 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| of the Brain . . . | 59 | 47 | 46 | 71 | 22 | 12 | 21 | 11 | 4 | 3 | 12 | 6 | 4 | 2 | 2 | 0 | 0 | 0 | 0 | 100 |
| Internal Ear . . . | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tonsils . . . | 7 | 4 | 7 | 3 | 1 | 2 | 4 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Neck . . . | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wind-pipe . . . | 2 | 1 | 1 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Throat . . . | 7 | 4 | 7 | 2 | 3 | 2 | 2 | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lungs . . . | 129 | 111 | 92 | 86 | 63 | 11 | 18 | 3 | 6 | 18 | 11 | 6 | 7 | 6 | 1 | 4 | 0 | 0 | 0 | 240 |
| Chest . . . | 24 | 13 | 16 | 11 | 19 | 5 | 3 | 0 | 0 | 4 | 3 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 3 |
| Heart . . . | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Pericardium . . . | 4 | 1 | 0 | 3 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Liver . . . | 14 | 9 | 5 | 1 | 3 | 1 | 1 | 1 | 0 | 0 | 5 | 2 | 3 | 3 | 1 | 2 | 0 | 0 | 0 | 2 |
| Stomach . . . | 14 | 16 | 3 | 9 | 4 | 0 | 1 | 1 | 0 | 0 | 5 | 2 | 5 | 0 | 5 | 1 | 0 | 0 | 0 | 30 |
| Kidney . . . | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spleen . . . | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Peritoneum . . . | 7 | 9 | 3 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 4 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bowels . . . | 46 | 50 | 31 | 35 | 30 | 17 | 11 | 8 | 2 | 1 | 6 | 5 | 10 | 2 | 3 | 2 | 0 | 0 | 0 | 90 |
| Uterus . . . | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bladder . . . | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 |
| Scrotum . . . | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Knee . . . | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Intemperance . . . | 12 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 6 | 1 | 2 | 0 | 0 | 0 | 0 | 13 |
| Inanition . . . | 7 | 10 | 5 | 4 | 7 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 13 |
| Irritation of the Brain . . . | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Stomach . . . | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Itis . . . | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Intussusception . . . | 3 | 0 | 3 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Injury of the Head and Brain . . . | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spine . . . | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hip . . . | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Jaundice . . . | 9 | 3 | 6 | 2 | 7 | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Laudarium to Excess . . . | 3 | 2 | 2 | 2 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Locked Jaw . . . | 7 | 2 | 2 | 0 | 0 | 0 | 1 | 1 | 6 | 2 | 3 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 10 |
| Mortification . . . | 19 | 16 | 9 | 6 | 5 | 1 | 3 | 0 | 0 | 2 | 2 | 1 | 5 | 0 | 3 | 4 | 1 | 1 | 0 | 3 |
| Nania . . . | 5 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 25 | 15 | 10 | 6 | 0 | 0 | 0 | 0 | 0 | 6 |
| a Potu . . . | 51 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 25 | 15 | 10 | 6 | 0 | 0 | 0 | 0 | 0 | 6 |
| Murdered . . . | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Malformation . . . | 9 | 6 | 9 | 1 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Measles . . . | 129 | 119 | 135 | 106 | 35 | 67 | 11 | 29 | 1 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| Obstruction of the Glottis . . . | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Old Age . . . | 18 | 52 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 20 | 36 | 11 | 3 | 7 | 0 |
| Ossification of Valves of Heart . . . | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Osteosarcoma of Upper Jaw . . . | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Palsy . . . | 27 | 11 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 6 | 7 | 3 | 15 | 4 | 1 | 0 | 4 |
| Carried over, . . . | 2178 | 2278 | 1614 | 1591 | 1263 | 579 | 727 | 303 | 81 | 106 | 124 | 111 | 335 | 201 | 188 | 152 | 91 | 18 | 7 | 487 |

| DISEASES. | Males. | Females. | Boys. | Girls. | Under 1 Year. | 1 to 2 | 2 to 5 | 5 to 10 | 10 to 15 | 15 to 20 | 20 to 30 | 30 to 40 | 40 to 50 | 50 to 60 | 60 to 70 | 70 to 80 | 80 to 90 | 90 to 100 | 100 to 110 | Total. |
|---|--------|----------|-------|--------|---------------|--------|--------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|------------|--------|
| Brought over, | 2478 | 2278 | 1611 | 1504 | 1263 | 579 | 727 | 303 | 81 | 102 | 134 | 141 | 335 | 201 | 188 | 152 | 61 | 18 | 7 | 1870 |
| Erysipelas | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 17 |
| Rheumatism | 9 | 2 | 3 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 2 | 3 | 0 | 3 | 1 | 3 | 1 | 0 | 0 | 42 |
| Rupture of Blood Vessel of the Uterus | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Amplissement of the Brain | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Stomach | 2 | 5 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 7 |
| ickets | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Still-born | 170 | 177 | 170 | 157 | 308 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 507 |
| Small-Pox | 55 | 46 | 26 | 35 | 22 | 11 | 21 | 6 | 1 | 3 | 26 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 101 |
| Scrofula | 15 | 11 | 13 | 5 | 0 | 3 | 8 | 3 | 1 | 3 | 4 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 26 |
| Scrofula | 14 | 5 | 4 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 3 | 3 | 5 | 2 | 1 | 1 | 0 | 0 | 0 | 19 |
| Stricture of the Colon | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Frethra | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Stroke | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Scicide | 11 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 5 | 1 | 0 | 1 | 0 | 0 | 0 | 16 |
| Cirrhosis of Glands | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 2 |
| Liver | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 2 |
| Stomach | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Pylorus | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| Uterus | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 |
| Pinta Bifida | 2 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Syphilis | 1 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Scrofula | 7 | 5 | 7 | 5 | 7 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| Tumour | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 |
| Letter | 2 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Scars | 0 | 3 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 |
| Irritation of the Throat | 1 | 4 | 1 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Lungs | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Bowels | 3 | 5 | 2 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 8 |
| Navel | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Umbilicus | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Unknown | 63 | 51 | 33 | 31 | 16 | 6 | 6 | 3 | 2 | 1 | 8 | 18 | 7 | 6 | 5 | 4 | 2 | 0 | 0 | 114 |
| Scrofula | 3 | 2 | 2 | 2 | 1 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Scrofula | 5 | 4 | 5 | 4 | 0 | 3 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Scrofula | 8 | 1 | 2 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Total | 2985 | 2681 | 1896 | 1738 | 1679 | 655 | 777 | 321 | 88 | 114 | 180 | 187 | 300 | 221 | 187 | 175 | 96 | 18 | 7 | 5996 |

Of the above, there were of Males of 20 years and upwards, 1089; under 20 years, 1896; Females of 20 years and upwards, 943; under 20 years, 1738.
 There were 398 returns received at the Health Office, of persons who died in the Almshouse of the City and Districts during the year; 58 people of colour are included in the total number of deaths.
 Agreeably to returns made at the Health Office, and collected from 150 Practitioners of Midwifery, there were born in the City and Liberties, during the year 1835, 1011 Male, and 315 Female Children, making the total number of Births 1326; showing a difference between the Births and Deaths of 2190.

Deaths in each Month of the Year.

| | Adults. | Children. | Total. |
|----------------------|---------|-----------|--------|
| January, | 186 | 288 | 474 |
| February, | 170 | 290 | 460 |
| March, | 216 | 246 | 462 |
| April, | 197 | 373 | 570 |
| May, | 158 | 305 | 463 |
| June, | 155 | 312 | 467 |
| July, | 197 | 478 | 675 |
| August, | 162 | 395 | 557 |
| September, | 189 | 335 | 524 |
| October, | 143 | 203 | 346 |
| November, | 130 | 207 | 337 |
| December, | 149 | 242 | 391 |
| Total | 2052 | 2614 | 5996 |

By order of the Board of Health.

WM. A. MARTIN, Clerk.

Health Office, Philadelphia, January 1st, 1836.

Statement of Deaths, with the Diseases and Ages, in the City and Liberties of Philadelphia, during the year 1836.

| DISEASES | Males. | Females. | Boys. | Girls. | Under 1 Year. | 1 | 2 | 5 | 10 | 15 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | Total. |
|--------------------------------|--------|----------|-------|--------|---------------|-----|-----|----|----|----|-----|-----|-----|-----|-----|-----|----|-----|-----|--------|
| | | | | | | to | to | to | to | to | to | to | to | to | to | to | to | to | to | |
| | | | | | | 2 | 5 | 10 | 15 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | |
| Abdominal Tumour | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Abscess | 5 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| of the Liver and Lungs | 6 | 1 | 2 | 1 | 1 | 1 | 0 | 2 | 0 | 0 | 3 | 1 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 1 |
| of the Ear | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| of the Kidneys | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pectoral | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| of the Throat | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| of the Knee joint | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lumbar | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Amenorrhœa | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Anemia | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Aneurism | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| of the Aorta | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Angina pectoris | 4 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 |
| Apthæ | 7 | 7 | 7 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Apoplexy | 50 | 38 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 0 | 4 | 15 | 13 | 13 | 14 | 13 | 7 | 1 | 0 | 8 |
| Asphyxia | 12 | 4 | 8 | 4 | 10 | 1 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Asthma | 3 | 7 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 |
| Atrophy | 46 | 70 | 12 | 40 | 55 | 13 | 8 | 3 | 1 | 2 | 2 | 1 | 2 | 3 | 4 | 1 | 1 | 0 | 0 | 1 |
| Bladder, Disease of the | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Blisters, effects of | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Blood-vessel, Rupture of a | 5 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Bowels, Disease of the | 5 | 3 | 3 | 3 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| Stricture of the | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ulceration of the | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Brain, Concussion of the | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Compression of the | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Congestion of the | 13 | 5 | 7 | 2 | 4 | 0 | 2 | 1 | 0 | 2 | 3 | 0 | 0 | 4 | 2 | 0 | 0 | 0 | 0 | 1 |
| Disease of the | 6 | 12 | 3 | 10 | 0 | 6 | 5 | 1 | 0 | 1 | 0 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Effusion on the | 7 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Irritation of the | 2 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Abscess of the | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Softening of the | 2 | 2 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 1 | 4 | 2 | 0 | 0 | 0 | 0 | 1 |
| Suppuration of the | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bronchial Vein, Rupture of the | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bronchitis | 79 | 62 | 62 | 41 | 50 | 26 | 17 | 5 | 5 | 1 | 8 | 3 | 4 | 5 | 6 | 10 | 1 | 0 | 0 | 14 |
| Burns | 12 | 12 | 10 | 9 | 1 | 3 | 11 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| Cachexia | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cancer | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| of the Breast | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 |
| Intestines | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Leg | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mouth | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ovaries | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Stomach | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Uterus | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 2 | 1 | 1 | 0 | 0 | 0 | 0 |
| Cardialgia | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Caries | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Casualties | 34 | 7 | 7 | 2 | 2 | 0 | 2 | 3 | 2 | 2 | 6 | 11 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 4 |
| Chest, Disease of the | 4 | 4 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| Effusion on the | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Child-bed | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cholera Morbus | 7 | 4 | 3 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 2 | 2 | 0 | 0 | 3 | 0 | 1 | 0 | 1 |
| Cholera Infantum | 17 | 95 | 117 | 95 | 135 | 53 | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| Chorea | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Cold, Exposure to | 0 | 2 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cold water, Drinking | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Colic | 2 | 1 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Palaters' | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Constipation | 2 | 1 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Consumption of the Lungs | 393 | 362 | 68 | 67 | 30 | 23 | 29 | 13 | 7 | 31 | 207 | 181 | 105 | 65 | 37 | 19 | 5 | 0 | 0 | 75 |
| Convulsions | 157 | 125 | 150 | 115 | 181 | 27 | 13 | 8 | 3 | 0 | 6 | 5 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 28 |
| Puerperal | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Croup | 55 | 63 | 54 | 62 | 39 | 30 | 33 | 13 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| Debility | 103 | 89 | 71 | 53 | 130 | 1 | 2 | 0 | 1 | 0 | 4 | 5 | 7 | 6 | 11 | 21 | 11 | 0 | 0 | 19 |
| Decay | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diabetes | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Diarrhœa | 67 | 69 | 34 | 35 | 54 | 6 | 7 | 1 | 0 | 1 | 11 | 16 | 6 | 9 | 10 | 10 | 5 | 0 | 0 | 13 |
| Dropsy | 51 | 54 | 45 | 3 | 0 | 5 | 7 | 3 | 2 | 1 | 12 | 11 | 20 | 21 | 15 | 6 | 1 | 0 | 1 | 10 |
| of the Head | 81 | 81 | 80 | 80 | 70 | 11 | 37 | 8 | 3 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 16 |
| Chest | 28 | 17 | 4 | 5 | 0 | 2 | 3 | 1 | 0 | 2 | 4 | 5 | 8 | 9 | 7 | 1 | 0 | 0 | 0 | 4 |
| Pericardium | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Drowned | 44 | 5 | 9 | 4 | 0 | 1 | 0 | 7 | 1 | 4 | 12 | 16 | 4 | 2 | 2 | 0 | 0 | 0 | 0 | 4 |
| Dysphagia | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Carried over, | 1318 | 1143 | 783 | 659 | 493 | 252 | 227 | 81 | 33 | 61 | 298 | 312 | 291 | 162 | 132 | 100 | 35 | 1 | 1 | 2704 |

| DISEASES | Males. | Females. | Boys. | Girls. | Under 1 Year. | 1 | 2 | 5 | 10 | 15 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | Total. |
|--|--------|----------|-------|--------|---------------|-----|-----|-----|----|-----|-----|-----|-----|-----|-----|-----|----|-----|-----|--------|
| | | | | | | to | to | to | to | to | to | to | to | to | to | to | to | to | to | |
| | | | | | | 2 | 5 | 10 | 15 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | |
| Brought over, | 1318 | 1143 | 784 | 659 | 493 | 252 | 227 | 81 | 33 | 61 | 298 | 312 | 201 | 162 | 132 | 109 | 35 | 1 | 1 | 2704 |
| Dysentery | 51 | 38 | 26 | 16 | 10 | 13 | 8 | 6 | 2 | 2 | 16 | 10 | 11 | 6 | 3 | 3 | 0 | 2 | 0 | 95 |
| Dyspnea | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Dyspepsia | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 5 |
| Epilepsy | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 8 |
| Eruptions | 1 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Erysipelas | 11 | 10 | 7 | 7 | 12 | 1 | 0 | 1 | 1 | 0 | 0 | 2 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 24 |
| Fever | 25 | 23 | 11 | 10 | 6 | 2 | 6 | 3 | 2 | 2 | 5 | 10 | 1 | 1 | 5 | 2 | 1 | 0 | 0 | 52 |
| Brain | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| Bilious | 10 | 14 | 3 | 3 | 0 | 2 | 2 | 0 | 1 | 1 | 6 | 1 | 1 | 4 | 5 | 1 | 0 | 0 | 0 | 24 |
| Continued | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 4 |
| Congestive | 4 | 6 | 2 | 3 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 2 | 0 | 0 | 0 | 10 |
| Hectic | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 |
| Intermittent | 8 | 5 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 6 | 1 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 13 |
| Miliary | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Nervous | 3 | 6 | 0 | 3 | 0 | 0 | 6 | 6 | 1 | 1 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Puerperal | 0 | 13 | 0 | 0 | 0 | 0 | 6 | 6 | 0 | 0 | 3 | 6 | 4 | 0 | 5 | 3 | 4 | 3 | 0 | 61 |
| Remittent | 32 | 29 | 10 | 8 | 4 | 2 | 2 | 5 | 3 | 13 | 7 | 8 | 5 | 3 | 4 | 3 | 0 | 0 | 0 | 230 |
| Scarlet | 110 | 130 | 107 | 15 | 31 | 31 | 108 | 51 | 6 | 2 | 5 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 411 |
| Typhus | 131 | 80 | 41 | 12 | 1 | 0 | 4 | 5 | 4 | 13 | 57 | 42 | 72 | 1 | 6 | 2 | 1 | 0 | 0 | 411 |
| Fracture of the Extremities | 5 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 2 | 0 | 7 |
| Fungus hæmatodes | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Gout | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 3 | 2 | 0 | 0 | 0 | 7 |
| Hæmorrhage | 16 | 11 | 3 | 0 | 1 | 0 | 1 | 1 | 0 | 10 | 7 | 4 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 54 |
| Head, Injury of the | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Heart, Enlargement of the | 9 | 5 | 3 | 1 | 0 | 0 | 1 | 1 | 0 | 2 | 2 | 2 | 0 | 2 | 1 | 2 | 0 | 0 | 0 | 17 |
| Malformation of the | 1 | 2 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Rupture of the | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 3 |
| Spasm of the | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 7 |
| Ossification of valves of | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Dilatation of the | 2 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 6 |
| Disease of the | 17 | 18 | 3 | 3 | 23 | 0 | 1 | 6 | 1 | 3 | 9 | 1 | 9 | 5 | 0 | 1 | 0 | 0 | 0 | 35 |
| Hernia | 3 | 3 | 0 | 1 | 1 | 0 | 6 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 6 |
| Whooping Cough | 51 | 73 | 33 | 51 | 17 | 21 | 28 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 94 |
| Hip-joint, Disease of the | 2 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Ileus | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Inanition | 3 | 2 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 5 |
| Inflammation | 0 | 3 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 5 |
| of the Brain | 3 | 27 | 20 | 31 | 17 | 7 | 17 | 7 | 7 | 13 | 13 | 0 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 96 |
| Internal Ear | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Parotid gland | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Larynx | 2 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Tonsils | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Throat | 1 | 2 | 1 | 2 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Lungs | 117 | 88 | 61 | 43 | 11 | 25 | 26 | 19 | 1 | 1 | 15 | 19 | 1 | 12 | 11 | 13 | 5 | 1 | 0 | 305 |
| Heart | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Chest | 22 | 22 | 11 | 10 | 12 | 4 | 5 | 0 | 0 | 0 | 1 | 8 | 6 | 1 | 2 | 0 | 0 | 0 | 0 | 45 |
| Windpipe | 2 | 1 | 2 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Pericardium | 3 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 6 |
| Stomach | 15 | 21 | 1 | 10 | 6 | 1 | 3 | 0 | 1 | 0 | 6 | 1 | 2 | 2 | 4 | 1 | 0 | 1 | 0 | 39 |
| Bowels | 60 | 43 | 35 | 25 | 32 | 1 | 9 | 9 | 1 | 1 | 13 | 11 | 12 | 4 | 1 | 2 | 1 | 0 | 0 | 103 |
| Kidneys | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 4 |
| Liver | 11 | 6 | 2 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 3 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 17 |
| Colon | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Peritoneum | 12 | 13 | 3 | 2 | 1 | 0 | 2 | 0 | 0 | 2 | 5 | 8 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 25 |
| Knee | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Pelvis | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 5 |
| Scrotum | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Testicle | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Bladder | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 3 |
| Veins | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Intemperance | 12 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 8 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 25 |
| Insanity | 11 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 1 | 2 | 6 | 3 | 2 | 1 | 2 | 0 | 0 | 19 |
| Intestines, Obstruction of the | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Mortification of the | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| Jaundice | 13 | 5 | 1 | 1 | 7 | 0 | 1 | 0 | 0 | 0 | 2 | 1 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 18 |
| Kidneys, Ulceration of the | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Liver, Disease of the | 15 | 8 | 3 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 2 | 5 | 1 | 2 | 1 | 0 | 1 | 0 | 18 |
| Congestion of the | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Locked jaw | 5 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 7 |
| Lungs, Effusion on the | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 3 |
| Mortification of the | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 6 |
| Congestion of the | 5 | 9 | 3 | 7 | 1 | 2 | 2 | 1 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| Disease of the | 1 | 3 | 2 | 2 | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 7 |
| Malformation | 7 | 3 | 7 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| Marasmus | 70 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 15 | 16 | 3 | 1 | 0 | 0 | 0 | 0 | 20 |
| Measles | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Mortification | 1 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Carried over, | 15 | 14 | 4 | 2 | 1 | 0 | 1 | 0 | 0 | 1 | 2 | 4 | 8 | 1 | 3 | 3 | 0 | 0 | 0 | 20 |
| Carried over, | 2353 | 1861 | 1209 | 1006 | 700 | 377 | 369 | 184 | 65 | 141 | 541 | 488 | 340 | 283 | 201 | 141 | 37 | 8 | 1 | 11111 |

| DISEASES. | Males. | Females. | Boys. | Girls. | Under 1 Year. | 1 to 2 | 2 to 5 | 5 to 10 | 10 to 15 | 15 to 20 | 20 to 30 | 30 to 40 | 40 to 50 | 50 to 60 | 60 to 70 | 70 to 80 | 80 to 90 | 90 to 100 | Total. | |
|-----------------------------|--------|----------|-------|--------|---------------|--------|--------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|--------|------|
| Brought over, | 233 | 1864 | 1208 | 1066 | 769 | 377 | 408 | 181 | 65 | 111 | 544 | 188 | 329 | 263 | 309 | 141 | 35 | 8 | 1 | 4411 |
| Murdered | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Necrosis of the thigh bone | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Œsophagus, Stricture of the | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Old age | 12 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 15 | 28 | 12 | 2 | 72 |
| Omentum, Fungus of the | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Ovarium, Disease of the | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| Palsy | 12 | 17 | 2 | 2 | 0 | 0 | 0 | 2 | 0 | 2 | 1 | 2 | 6 | 7 | 13 | 10 | 3 | 0 | 1 | 45 |
| Phlegmasia dolens | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Poisoned | 6 | 9 | 1 | 3 | 2 | 0 | 1 | 0 | 0 | 1 | 7 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 14 |
| Polypus | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Purpura | 0 | 2 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Rectum, Disease of the | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Malformation of the | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Rheumatism | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 |
| Rickets | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Rupia | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Skull, Fracture of the | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 |
| Scirrhus | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| of the Uterus | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Stomach | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Female Breast | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Scrofula | 7 | 12 | 6 | 10 | 1 | 4 | 4 | 3 | 3 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 19 |
| Scrotum, Ulceration of the | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Mortification of the | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Scurvy | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Small-pox | 51 | 35 | 31 | 29 | 19 | 9 | 2 | 1 | 2 | 4 | 7 | 12 | 4 | 2 | 0 | 1 | 0 | 0 | 0 | 86 |
| Spina bifida | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Spine, Disease of the | 5 | 31 | 5 | 2 | 3 | 1 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Fracture of the | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Caries of the | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Spleen, Disease of the | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Still-born | 171 | 164 | 0 | 0 | 335 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 335 |
| Stomach, Disease of the | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Inflammation of the | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Sudden | 11 | 8 | 1 | 2 | 9 | 1 | 1 | 0 | 0 | 1 | 1 | 3 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 19 |
| Suicide | 10 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 12 |
| Syphilis | 4 | 2 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| Teething | 4 | 10 | 1 | 2 | 5 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 11 |
| Throat, Disease of the | 7 | 3 | 3 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 |
| Tubercular disease | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Tympanites | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 |
| Ulcers | 2 | 2 | 3 | 2 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Unknown | 72 | 66 | 26 | 23 | 39 | 6 | 3 | 1 | 1 | 14 | 50 | 24 | 9 | 13 | 1 | 0 | 0 | 0 | 0 | 158 |
| Uterus, Ulceration of the | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Disease of the | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Vomiting | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 2 |
| Worms | 2 | 1 | 2 | 4 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| Total, | 2858 | 2473 | 101 | 1165 | 1196 | 11 | 108 | 200 | 73 | 121 | 575 | 638 | 177 | 295 | 242 | 182 | 99 | 22 | 4 | 4535 |
| Toiel, | | | | | | | | | | | | | | | | | | | | |

Of the above, deducting the Still-born, there were Males of 20 years and upwards, 1407; under 20 years, 1301. Females of 20 years and upwards, 1114; under 20 years, 1228.

There were 415 returns received at the Health Office, of persons who died in the Alms-house of the City and Districts during the year: 711 people of colour are included in the total number of deaths.

Agreeably to returns made at the Health Office by 119 Practitioners of Midwifery, there were born in the City and Liberties, during the year 1836, 361 Male, and 351 Female Children, making the total number of Births 710; showing a difference between the Births and Deaths of 2051.

Deaths in each Month of the Year.

| | Adults. | Children. | Total. |
|----------------------|---------|-----------|--------|
| January, | 182 | 275 | 457 |
| February, | 165 | 222 | 387 |
| March, | 177 | 196 | 373 |
| April, | 251 | 225 | 479 |
| May, | 231 | 119 | 351 |
| June, | 204 | 182 | 386 |
| July, | 260 | 311 | 570 |
| August, | 216 | 309 | 515 |
| September, | 229 | 301 | 530 |
| October, | 189 | 191 | 382 |
| November, | 202 | 187 | 389 |
| December, | 235 | 265 | 500 |
| | 2551 | 2806 | 5357 |

By order of the Board of Health.

SAMUEL P. MARKS, Clerk.

Remarks on the Philadelphia Bills of Mortality for the years 1835 and 1836.—The number of deaths in 1835 exceeds that of 1834, 593; whilst that of 1836 falls short of the mortality of 1835, 309. Most of the excess in 1835 is to be ascribed to the greater mortality in the early periods of life, the deaths of children exceeding that of adults 562, whilst in 1836 the excess of children was only 255.

The comparative mortality of the several years, from those diseases which prove most destructive to human life, may be seen in the following table:

| DISEASE. | | | | | | 1834 | 1835 | 1836 |
|---|---|---|---|---|---|------|------|------|
| Consumption, | - | - | - | - | - | 636 | 717 | 755 |
| Convulsions, | - | - | - | - | - | 277 | 351 | 282 |
| Small-Pox, | - | - | - | - | - | 195 | 101 | 86 |
| Varioloid, | - | - | - | - | - | 17 | 5 | |
| Measles, | - | - | - | - | - | 7 | 248 | 4 |
| Scarlet Fever, | - | - | - | - | - | 88 | 305 | 210 |
| Croup, | - | - | - | - | - | 81 | 128 | 118 |
| Hooping-Cough, | - | - | - | - | - | 48 | 106 | 94 |
| Bronchitis, | - | - | - | - | - | 121 | 171 | 141 |
| Apoplexy, | - | - | - | - | - | 76 | 71 | 88 |
| Inflammation of the Brain, | - | - | - | - | - | 104 | 106 | 96 |
| Fevers, exclusive of Scarlet and Puerperal, | - | - | - | - | - | 175 | 149 | 389 |
| Fever, Typhus, | - | - | - | - | - | 61 | 42 | 220 |
| Bowel Complaints, | - | - | - | - | - | 623 | 545 | 454 |
| Inflammations of all kinds, including Bronchitis. | - | - | - | - | - | 642 | 778 | 711 |
| Dropsies, | - | - | - | - | - | 353 | 360 | 317 |

The above statement shows that the mortality from small-pox has been gradually subsiding, and that measles, which in 1835 was so very destructive, in 1836 had almost disappeared. Scarlet fever, though still swelling the bill of mortality, was on the decline; and the deaths from bowel complaints was much reduced, especially when compared with those of 1834. The mortality from fevers during the last year was more than double that of either of the preceding years, and the increase is highly conspicuous in typhus and nervous fevers.

The following table exhibits the mortality from bowel complaints in the years 1835 and 1836; and shows that the disparity between the deaths of adults and children, though always great, was much less in 1836 than in the preceding year.

| | 1835. | | | 1836. | | |
|-----------------|---------|-----------|--------|---------|-----------|--------|
| | Adults. | Children. | Total. | Adults. | Children. | Total. |
| Cholera Morbus, | 13 | 4 | 27 | 7 | 4 | 11 |
| Infantum, | | 275 | 275 | | 212 | 212 |
| Dysenterry, | 40 | 74 | 114 | 67 | 69 | 136 |
| Diarrhœa, | 49 | 80 | 129 | 53 | 42 | 95 |
| | 102 | 443 | 545 | 127 | 327 | 454 |

The births during the last three years, with the proportions of the sexes, are represented as follows:

| | Males. | Females. | Total. | Excess of Males. |
|-------|--------|----------|--------|------------------|
| 1834, | 3937 | 3635 | 7572 | 302 |
| 1835, | 4041 | 3815 | 7856 | 226 |
| 1836, | 3861 | 3514 | 7408 | 320 |

The apparent falling off in the amount of births in 1836, is undoubtedly owing to some defalcation in making or collecting the returns. G. E.

Animal Magnetism.—This is the wonder of the day. The stories current regarding its effects, and sustained by what is deemed credible authority, are of the most miraculous character. It is seriously affirmed that persons, under what is termed "the magnetic influence," are endowed with the power of seeing through numerous opaque envelopes and reading sentences therein enclosed; of predicting future events; of visiting, *in spirit*, distant places, and seeing what is passing there; and with various other faculties, equally extraordinary, and contrary to what has hitherto been deemed the well established laws of nature. The belief in these wonders is said to be almost as general in some parts of New England as that in witchcraft was a century and a half ago; and, as was the case with this last delusion, it is not confined to the ignorant and vulgar, but numbers among its votaries many educated persons and those holding high stations—clergymen, professors in colleges, physicians, and members of the bar and bench. It might be supposed that, before persons of general intelligence could be induced to repose faith in such startling propositions as those we have mentioned, evidence of the most unquestionable character must have been adduced. No such evidence, however, can we find to have been afforded; and, in the absence of all such, we must infer that a well devised and ingenious system of jugglery has been practised: adding another to the numerous exemplifications of the fact, that ingenious knavery always finds in the world credulity sufficient to furnish dupes.

We do not mean this disrespectfully. The whole history of the human race is a record of delusions. From the golden calf to the prophet Mathias, how many delusions have not prevailed in religion! In medicine, from Hoangti to Hahnemann, have we not had a succession of absurd doctrines, and all found votaries; even the last, the most irrational of all. In what art or science, indeed, has not man's mind rioted in extravagances? What hypothesis ever framed has been too ridiculous not to have been received by many as established truth. Mankind have always been too apt to mistake opinions for facts, and the phantoms of the imagination for real existences. There is no subject less understood than that of evidence. A thorough and philosophical treatise on the principles of evidence, divested of technicalities, is amongst the greatest of desiderata.

Whilst we repudiate the extravagances of animal magnetism, (what is termed *clairvoyance*, for example,) we do not deny that very remarkable phenomena follow, and appear to result from, the operations of magnetisers. What is the nature, however, of these phenomena, and the causes by which they are produced, remains yet to be exposed. So far as we have witnessed them, they are analogous to those frequently seen in diseased states of the nervous system, and are chiefly remarkable and excite surprise from being produced under influences not supposed capable of such effects.

It is the duty of a sound philosophy to carefully observe and record all these phenomena, and after a sufficient number have been collected, to analyze them, classify them, and compare them with those exhibited in the various diseases of the nervous system. All this must be done in good faith, and without allowing the mind to be influenced by preconceived opinions. Especially necessary also is it, that in recording what is observed, no terms should be employed predicated upon theory. The words animal magnetism should, for the present, at all events, be abandoned, as its use indicates the adoption of an hypothesis—a belief in an invisible, imponderable fluid—the existence of which is entirely supposititious. Above all, we must be careful not to allow ourselves to be duped by charlatans; who, knowing how to take advantage of the moment when we are thrown off our guard by surprise at seeing phenomena produced at a moment when not expected, challenge our belief to the full extent, in their marvellous powers. Having proved to us the verity of what we may have deemed *improbable*, they would, on the faith of the credit thus gained, have us give credence to what is *impossible*.

Several competent physicians are now investigating the subject, and, we think, in the right spirit. With the better knowledge we now possess of the nervous system, some fruits may be expected from their inquiries. When completed, we hope to be able to present them to our readers.

Having premised so much, we shall now give a brief history of animal magnetism, and an account of the processes to be followed by magnetizers. We derive the former principally from Millingen's *Curiosities of Medical Experience*, a work with which we propose hereafter to make our readers more fully acquainted—the latter from Hartshorne's translation of Deleuze's *Practical Instruction in Animal Magnetism*.

"So early as 1462, Pomponatius of Mantua maintained, in his work on incantation, that all the pretended arts of sorcery and witchcraft were the mere results of natural operations; he farther gave it as his opinion, that it was not improbable but that external means, called into action by the soul, might relieve our sufferings; that there, moreover, did exist individuals endowed with salutary properties, and it might therefore easily be conceived that marvellous effects should be produced by the imagination, and by confidence, more especially when they are reciprocal between the patient and the person who assists his recovery; physicians and men of sense being well convinced that if the bones of any animal were substituted for those of a saint, the result would be the same. It need not be added that our author was violently persecuted for this heretical doctrine. Two years after, Agrippa, in Cologne, asserted that the soul inflamed by a fervent imagination could dispense health and disease, not only in the individual himself, but in other bodies. In 1493, Paracelsus expressed himself in the following language: 'All doubt destroys work, and leaves it imperfect in the wise designs of nature. It is from faith that imagination draws its strength. It is by faith that it becomes complete and realised. He who believeth in nature will obtain from nature to the extent of his faith. Let the object of this faith be real or imaginary, you nevertheless reap similar results, and hence the cause of superstition.'

"Cardanus, Bacon, Van Helmont pursued this study; and the latter physician, having cured several cases by magnetism, was considered a sorcerer, and seized by the Inquisition. Magnetism, he observed, 'is a universal agent, and only novel in its appellation, and paradoxical to those who ridicule everything they do not comprehend, or attribute to Satan what they cannot understand. The name of magnetism is given to that occult influence which bodies possess on each other at various distances, either by attraction or by impulsion. The means or the vehicle of this influence is an ethereal spirit, pure, vital, (*magnole magnum*.) which penetrates all matter, and agitates the mass of the universe. This spirit is the moderator of the world, and establishes a correspondence between its several parts and the powers with which it is endowed. We can attach to a body the virtues that we possess, communicate to it certain properties, and use it as the intermediate means to operate salutary effects. I have hitherto withheld the revelation of this great mystery. There exists in man a certain energy, which can act beyond his own person according to his will or his imagination, and impart virtues and exercise a durable influence even in distant objects. Will is the first of powers.' Van Helmont fully admitted the wonderful faculties that somnambulism seemed to develop, and informs us that it was chiefly during his sleep that he was inspired with his doctrines. One might have imagined that these philosophic researches would have put an effectual stop to the progress of superstition, or rather of persecution; yet their promulgation could not save Urbain Grandier, and many supposed sorcerers, from a barbarous death.

"It was in the beginning of the eighteenth century that various experiments were made with the loadstone in researches regarding electricity. In 1754, Lenoire had constructed magnets that could be used with facility in the treatment of various diseases. In 1771, Father Hell, a Jesuit and professor of astronomy at Vienna, having cured himself of a severe rheumatism by magnetism, related the result of his experiments to Mesmer. This physician was immediately struck with observations that illustrated his own theories respecting planetary influence. He forthwith proceeded to procure magnets of every form and description for the gratuitous treatment of all those that consulted him: and, while he widely diffused

his doctrines, he sent his magnets in every direction to aid the experimental pursuits of others, and thus expressed himself on the subject in a memoir published in 1779: 'I had maintained that the heavenly spheres possessed a direct power on all the constituent principles of animated bodies, particularly on the *nervous system*, by the agency of an all-penetrating fluid. I determined this action by the INTENSION and the REMISSION of the properties of matter and organized bodies, such as gravity, cohesion, elasticity, irritability, electricity. I supported this doctrine by various examples of periodical revolutions; and I named that property of the animal matter, which renders it susceptible to the action of celestial and earthly bodies, ANIMAL MAGNETISM. A farther consideration of the subject led me to the conviction that there does exist in nature a universal principle, which, independent of ourselves, performs all that we vaguely attribute to nature or to art.'

"Mesmer, as might have been foreseen, became the subject of persecution and of ridicule, and withdrew to Switzerland and Suabia. It was there that he met with a certain Gassner of Braz, who, having fancied that an exorcism had relieved him from a long and painful malady, took it into his head to exorcise others. He considered the greater part of the disorders to which flesh is heir as the work of the Devil, and he counteracted his baneful influence in the name of our SAVIOUR: He divided these diabolical visitations into *possessions*, *obsessions*, and *circumsessions*; the latter being trifling invasions. For the purpose of ascertaining whether his patients laboured under natural or infernal ailments, he conjured Satan to declare the truth. If, after three solemn interpellations, and signs of the cross, the Devil did not answer, the disorder was considered as coming within the province of medicine; but if, on the contrary, the patient fell into convulsions, Gassner drew forth his stole and crucifix, and in the name of the Redeemer commenced rubbing and pinching, sometimes in the most indecorous manner, when females were submitted to his manipulations. When his attempts failed, he accused the patient of want of faith or of the commission of some deadly sin, which baffled his endeavours. His fame became so universal that the Bishop of Ratisbon sent for him, and he exercised his art under his auspices; at one period the town was so crowded with his patients, that ten thousand of them were obliged to encamp without the walls. It appears that this adventurer had the power of acting upon the pulse, and could increase or retard it, render it regular or intermittent, and was even reported to paralyse limbs and produce tears or laughter at will. It is scarcely credible, yet the celebrated De Haen, one of the most distinguished and learned practitioners in Germany, not only believed in the power of this Gassner, but actually attributed it to a paction with the Devil.

"Mesmer was not so credulous, and explained the miraculous cures of Gassner by the doctrines of the animal magnetism which he advocated. From Suabia he returned to Vienna, whence he was expelled as a quack; and in 1778 arrived in Paris, a capital that had patronised Cagliostro and St. Germain, and was ever ready to be deceived by ingenious empiricism. In 1779 he published a paper on the subject, in which he maintained twenty-seven propositions to establish his supposed influence between the celestial bodies, the earth, and animated matter, produced by a fluid universal, subtle, susceptible of receiving, transmitting, and communicating its impressions, on mechanical principles until then unknown, and producing alternate effects of flux and reflux. This powerful agent, he said, acted chiefly on the nervous system. The human body, moreover, according to his notions, possessed properties analogous to the loadstone, and presenting an opposed polarity, subject to various modifications, which either strengthened or weakened it. The action of animal magnetism, according to him, was not confined to animal matter, but could be equally communicated to inanimate bodies at various distances. Mirrors could reflect and increase its power like the rays of light, and sound could propagate and increase it. This magnetic property, he farther stated, could be accumulated, concentrated, and transported at pleasure, although there did exist animated bodies possessed of properties so opposite as to render this powerful agent inefficient. He found that the loadstone was susceptible of animal magnetism, and of its opposite virtues, without any apparent influence on its power over iron and the needle; whence he concluded that there existed a wide difference between animal and mineral magnetism.

"Mesmer soon found a warm advocate of his doctrines in a Dr. D'Eslon, and

animal magnetism became in fashionable vogue. Not only were men and animals subjected to their experiments, but this wondrous influence was communicated to trees and plants, and the celebrated elm-tree of Beaugency was magnetised by the Marquis de Puységur and his brother; while the enthusiastic D'Eslon absolutely went knocking from door to door to procure patients. Breteuil, who was then one of the ministers, offered Mesmer a yearly pension of thirty thousand francs, with a sum of three hundred thousand francs in cash, with the decoration of St. Michael, if he would consent to reveal the mysteries of his science to the medical faculty. This tempting offer our magnetiser indignantly rejected, and a secret society was instituted under the name of the Lodge and Order of Harmony. The charms and the power of youth and music were not neglected as auxiliaries to propagate the fashionable doctrine. Young men of elegant manners and athletic form were initiated in the practice of magnetising, and the salons of Paris consecrated to this worship (for such it might have been termed) were crowded with the most fascinating women that the gay metropolis of France could produce. Most of these females, impassioned by nervous excitability, as loose in their morals as to outward appearance they were fervent in their devotions, abandoned themselves without reserve to the delightful sensations that magnetism and its surrounding machinery were said to afford. In their ecstasies, their hysteric attacks, their spasms, Mesmer, the high-priest, fancifully dressed, but in the height of fashion, with his youthful acolytes, endeavoured to soothe and calm the agitation of their enchanting patients by all the means that Mesmerism could devise.

"It soon became pretty evident that these phenomena were solely to be attributed to the influence of imagination; and Doppet, one of the most ardent disciples of the new creed, frankly avowed that 'those who were initiated in the secrets of Mesmer entertained more doubts on the subject than those who were in thorough ignorance.' Notwithstanding this evidence brought forward against Mesmer's fascinating practice, he was warmly eulogised even by high churchmen; and Hervier, a doctor of Sorbonne, did not hesitate to assert that the golden age was on the return; that man would be endowed with fresh vigour, live for the space of five generations, and only succumb to the exhaustion of age; that all the animal kingdom would enjoy a similar blessing; while magnetised trees would yield more abundant and delicious fruits. This belief of the good ecclesiastic arose, according to his own assertion, from his having been cured of some cruel disorder by magnetism, while all his intimate acquaintances insisted that he had never ceased to enjoy perfect health.

"Such were the circumstances that attended the introduction of animal magnetism, which to this day is defended and maintained by ardent proselytes. Sound philosophy can only attribute its wonderful phenomena, many of which cannot be denied, to the influence of the imagination, and the all-powerful deceptive agency of faith. It is an incontrovertible fact that the nervous system may be so worked upon, thrown by various secret and physical means into such a morbid condition, that results bordering upon the miraculous in the eyes of the credulous may be easily obtained. Every circumstance that appears to differ from the usual course of nature is deemed miraculous by the ignorant; and the Greek proverb *θauματα μαγισ*, plainly maintains that miracles are only for the simple. In fact, who are the persons who in our times cry out 'miracle,' but weak and timid men, worn out by excesses or age, labouring under the influence of terror; silly old women, who have not the power of reasoning; or nervous and enthusiastic females, who seek for some saving clauses in a pact between vice and virtue, depravity and religion.

"All the wonders of the creation are miraculous, if we are to consider as such those phenomena that are, and most probably will ever remain, beyond our humble and miserable comprehension."

The doctrine of Animal Magnetism has several times been brought before the Academy of Medicine of France. In 1827, a committee of eleven members were appointed by this body to examine the subject. This committee consisted of M. M. Bourdois de la Motte, Fouquier, Guenen de Mussy, Guersent, Husson, Itard, Leroux, Marc, Thillaye, Double and Magendie, all

names well known to science. Of these gentlemen, the two last declined to act. A report drawn out by M. Husson was made in 1831, and which gave rise to much discussion.

This subject was again incidentally brought before the Academy in January last, and on the 14th February, at the request of M. Berna, a new committee was appointed to which he promised to exhibit the phenomena of Animal Magnetism. This committee consisted of MM. Bouillaud, Emery, Oudet, Roux, Cloqueot, Dubois d'Amiens, Cornac, Pelletier, and Caventou. A report written by M. Dubois d'Amiens was made from this committee in August last, minutely detailing their proceedings.

This report is too long for us to give at present, but their final conclusion was, that M. Berna had deceived himself when he promised to exhibit to a committee of the Academy *conclusive* facts, and when he affirmed that these facts were of a character to throw light on Physiology and Therapeutics. These facts, say the committee, were any thing but conclusive in favour of the doctrine of Animal Magnetism; and that they had nothing in common either with Physiology or Therapeutics.

The following are the processes to be employed by magnetisers, as given by Deluze.

"Cause your patient to sit down in the easiest position possible, and place yourself before him, on a seat a little more elevated, so that his knees may be between yours, and your feet by the side of his. Demand of him in the first place that he give himself up entirely, that he think of nothing, that he do not trouble himself by examining the effects which he experiences, that he banish all fear, and indulge hope, and that he be not disquieted or discouraged if the action of magnetism produces in him temporary pains.

"After you have brought yourself to a state of self-collectedness, take his thumbs between your two fingers, so that the inside of your thumbs may touch the inside of his. Remain in this situation five minutes, or until you perceive there is an equal degree of heat between your thumbs and his: that being done, you will withdraw your hands, removing them to the right and left, and waving them so that the interior surface be turned outwards, and raise them to his head; then place them upon his two shoulders, leaving them there about a minute; you will then draw them along the arm to the extremity of the fingers, touching lightly. You will repeat this *pass** five or six times, always turning your hands and sweeping them off a little, before reascending: you will then place your hands upon the head, hold them there a moment, and bring them down before the face, at the distance of one or two inches, as far as the pit of the stomach: there you will let them remain about two minutes, passing the thumb along the pit of the stomach, and the other fingers down the sides. Then descend slowly along the body as far as the knees, or farther; and, if you can conveniently, as far as the ends of the feet. You may repeat the same processes during the greater part of the sitting. You may sometimes draw nearer to the patient so as to place your hands behind his shoulders, descending slowly along the spine, thence to the hips, and along the thighs as far as the knees, or to the feet. After the first passes you may dispense with putting your hands upon the head, and make the succeeding passes along the arms, beginning at the shoulder; or along the body commencing at the stomach.

"When you wish to put an end to the sitting, take care to draw towards the extremity of the hands, and towards the extremity of the feet, prolonging your passes beyond these extremities, and shaking your fingers each time. Finally, make several passes transversely before the face, and also before the breast, at the distance of three or four inches: these passes are made by presenting the two hands together and briskly drawing them from each other, as if to carry off the superabundance of fluid with which the patient may be charged. You see that

* I employ here the word *pass*, which is common to all magnetizers: it signifies all the movements made by the hand in *passing* over the body, whether by slightly touching, or at a distance.

it is essential to magnetize, always descending from the head to the extremities, and never mounting from the extremities to the head. It is on this account that we turn the hands obliquely when they are raised again from the feet to the head. The descending passes are magnetic, that is, they are accompanied with the intention of magnetizing. The ascending movements are not. Many magnetizers shake their fingers slightly after each pass. This method, which is never injurious, is in certain cases advantageous, and for this reason it is good to get in the habit of doing it.

"Although you may have at the close of the sitting taken care to spread the fluid over all the surface of the body, it is proper, in finishing, to make several passes along the legs from the knees to the end of the feet. These passes free the head. To make them more conveniently, place yourself on your knees in front of the person whom you are magnetizing.

"I think it proper to distinguish the passes that are made without touching, from those which are made with the touch, not only with the ends of the fingers, but with all the extent of the hand, employing at the same time a slight pressure. I give to these last the name of *magnetic frictions*; they are often made use of to act better upon the arms, the legs, and the back, along the vertebral column. This manner of magnetizing by longitudinal passes, directing the fluid from the head to the extremities, without fixing upon any part in preference to others, is called *magnetizing by the long pass*, (*magnetiser à grands courans*). It is more or less proper in all cases, and it is requisite to employ it in the first sitting, when there is no special reason for using any other. The fluid is thus distributed into all the organs, and it accumulates naturally in those which have need of it. Besides the passes made at a short distance, others are made, just before finishing, at the distance of two or three feet. They generally produce a calm, refreshing, and pleasurable sensation.

"There is one more process by which it is very advantageous to terminate the sitting. It consists in placing one's-self by the side of the patient, as he stands up, and, at the distance of a foot, making with both hands, one before the body and the other behind, seven or eight passes, commencing above the head and descending to the floor, along which the hands are spread apart. This process frees the head, re-establishes the equilibrium, and imparts strength.

"When the magnetizer acts upon the patient, they are said to be in *communication*, (*rapport*). That is to say, we mean by the word *communication*, a peculiar and induced condition, which causes the magnetizer to exert an influence upon the patient, there being between them a communication of the vital principle.

"This communication is sometimes established very soon, and sometimes after a long trial. This depends upon the moral and physical conditions of the two individuals. It is rare not to have it established at the first sitting. Experienced magnetizers generally perceive it in themselves when this takes place.

"When once the communication is well established, the action is renewed in the succeeding sittings, at the instant of beginning to magnetize. Then if you wish to act upon the breast, the stomach, or the abdomen, there is no utility in touching, provided it is not found more convenient. Ordinarily magnetism acts as well and even better in the interior of the body, at the distance of one or two inches, than by the touch. It is enough at the commencement of the sitting to take the thumbs a moment. Sometimes it is necessary to magnetize at the distance of several feet. Magnetism at a distance is more soothing, and some nervous persons cannot bear any other.

"In making the passes it is unnecessary to employ any greater muscular force than what is required to lift the hand and prevent it from falling. The movements should be easy and not too rapid. A pass from the head to the feet may take about half a minute. The fingers ought to be a little separated from each other, and slightly bent, so that the ends of the fingers be directed towards the person magnetized.

"It is by the ends of the fingers, and especially by the thumbs, that the fluid escapes with the most activity. For this reason it is, we take the thumbs of the patient in the first place, and hold them whenever we are at rest. This process generally suffices to establish the communication; to strengthen which there is also one other process. It consists in placing your ten fingers against those of the

patient, so that the inside of your hands are brought near to the inside of his; and the fleshy part of your fingers touch the fleshy part of his, the nails being outwards. The fluid seems to flow less copiously from the back of the hands than from the inside; and this is one of the reasons for turning the hands in raising them, without carrying them off too far from the body.

"The processes I have now indicated, are the most regular and advantageous for magnetism by the long pass, but it is far from being always proper, or even possible to employ them. When a man magnetizes a woman, even if it were his sister, it might not be proper to place himself before her in the manner described; and also when a patient is obliged to keep his bed, it would be impossible to make him sit, in order to sit in front of him.

"In the first case, you can place yourself by the side of the person whom you wish to magnetize. First, take the thumbs, and, the better to establish the communication, place one hand upon the stomach, and the other upon the back, then lower the two hands opposite to each other, one down the back and the other at a distance down the forepart of the body; one hand descending to the feet. You may magnetize the two arms, one after the other, with one hand only.

"In case the patient cannot raise himself, take your station near his bed in the most convenient manner; take his thumbs, make several passes along the arms, and, if he can support himself upright, several along the back; then, not to fatigue yourself, use only one hand, placing it upon the stomach, and making longitudinal passes, at first slightly touching through the clothes, then at a distance. You can hold one hand fixed upon the knees or upon the feet, while the other is in motion. Finish by passes along the legs, and by transversal passes before the head, the breast, and the stomach, to scatter the superabundant fluid. When the communication is established, one can magnetize very well by placing himself at the foot of the patient's bed, and in front of him; then directing at that distance both hands from the head to the feet, dashing them aside after each pass so as not to conduct the fluid to himself. I have produced somnambulism by this process, without establishing the communication by touching.

"This is what I have to say about magnetism by the long pass, with which it is always proper to commence, and to which a person may confine himself until he has a reason for employing other processes."

Convulsionists of Saint Medard.—The horrors which the famous convulsionists of Paris and other parts of France underwent, not only voluntarily but at their most earnest prayer and solicitation, has been often alluded to in connexion with animal magnetism, and as it very strikingly illustrates the effects of enthusiasm in rendering its victims insensible to external agents, we extract the following narrative of those events from Millingen's *Curiosities of Medical Experience*.

"This work of miracles, as it was called, was first performed by a priest of the name of Paris, in 1721, and, strange to say, the aberration continued for upwards of twelve years. Paris having departed this life in the odour of sanctity, (at least according to the conviction of the Jansenists, who had opposed with no little violence the famous bull *Unigenitus*;) the Appellants, for such they thought proper to denominate their sect, appealed to the remains of their beatified companion to operate miracles in support of their common cause. The Appellants were absurdly persecuted, therefore miracles became manifestations easy to obtain. Having succeeded in finding credulous dupes, the next step was to work their credulity into a useful state of enthusiasm. They therefore summoned all the sick, lame, and halt, of their sectarians to repair to the tomb of St. Paris for radical relief. Crowds were soon collected round his blessed sepulchre. It is now generally supposed that animal magnetism was resorted to in these curative operations, or rather religious ceremonies. Had not the means thus employed for the purpose been recorded and authenticated by the most irrefragable authorities, the sceptic might long pause before he would yield them credence.

"The patient (a female) was stretched on the ground, and the stoutest men that could be found were directed to trample with all their might and main upon her body; kicking the chest and stomach, and attempting to tread down the ribs with

their heels. So violent were these exertions, that it is related a hunchbacked girl was thus kicked and trampled into a goodly shape.

"The next exercise was what they called the *plant*, and consisted in laying a deal board on the patient while extended upon the back, and then getting as many athletic men as could stand upon it, to press the body down; and in this endeavour they seldom showed sufficient energy to satisfy the supposed sufferer, who was constantly calling for more pressure.

"Next came the experiment of the *pebble*, a diminutive name they were pleased to give to a paving-stone weighing two-and-twenty pounds, which was discharged by the operator upon the patient's stomach and bosom, from as great a height as he could well raise the weighty body. This terrific blow was frequently inflicted upwards of a hundred times, and with such violence, that the house and the furniture of the room, vibrated under the concussion, while the astonished by-standers were terrified by the hollow sound re-echoed by the enthusiast at every blow.

"Carre de Montgeron affirms that the *pebble* was not found sufficiently powerful, and the operator was obliged in one case to procure an iron fire-*de-gauche* (weighing about thirty pounds, which was discharged as violently as possible on the pit of the patient's stomach at least a hundred times. This instrument having for the sake of curiosity been hurled against a wall, brought part of it down at the twenty-fifth blow. The operator further states, that he had commenced, according to the usual practice, by inflicting moderate blows, until he was induced by her lamentable entreaties to redouble his vigour, but all to no purpose: his strength was unavailing, and he was obliged to employ a more athletic surgeon, who fell to work with such energy that he shook the whole house. The Convulsionist, who was of the gentle sex, would not allow sixty blows, she had received from her first doctor to be included in the calculation of the dose, but insisted upon having her whole hundred as prescribed. It further appears, that at each stroke the delighted enthusiast would exclaim in ecstasy, "Oh, how nice!" "Oh, how it does me good!" "Oh, dear brother hit away—again—again!" For be it known, these operators were called by the affectionate name of brothers, whose claims to fraternal affection were in the ratio of the weight of their kindness towards the sisterhood.

"One of these young ladies, who was not easily satisfied, wanted to try her own skill, and jumped with impunity into the fire, an exploit which obtained her the glorious epithet of Sister Saisander. The names that these amiable devotees gave to each other were somewhat curious. They all strove to imitate the whining and wheedling of spoiled children, or petted infants: one was called *L'Inchicille*, another *L'Abogere*, a third *Le Nieth*, and they used to beg as hard for barley-sugar and cakes: barley-sugar signified a stick big enough to fell an ox, and cakes meant paving-stones. The excesses of these maniacs were at last carried to so fearful an extent, and their religious ceremonies were so abused by obscenities, that the police was obliged to interfere, and forbid these disorderly practices; hence it was affirmed that the folk-wing somewhat capricious notice was suspended over the church-door:

De par le Roi, defence à Dieu,
De faire miracle en ce lieu.

"These lunatics, for such they must be considered, were not impostors. They had been worked to this degraded state by the plastic power of suggestion, and implicit reliance was placed in their assertions; for, as Pascal said, we must believe people who are ready to have their throats cut. Whether the Jansenist priests belonged to the same class, I leave to the reader to decide.

"Cabanis, in his interesting work, *Rapports du Physique et du Moral de l'Homme*, offers the following remarks on this most curious subject: "Its usability may be considered in the light of a fluid the quantity of which is determined, and which, when carried to certain channels in greater proportion than to others, must of course be diminished in the latter ones. This is evident in all violent affections, but more especially in those ecstasies where the brain and other sympathetic organs are possessed of the highest degree of energetic action, while the faculty of feeling and of motion—in short, the vital powers—seem to have fled from the other parts of the system. In this violent state maniacs have re-

ceived with impunity severe wounds, which, if inflicted in a healthy condition, would have proved fatal or most dangerous; for the danger that results from the violent action of external agents on our organs depends on their sensibility, and we daily see poisons, which would be deleterious to a healthy man, innocuous in a state of illness. It was by availing themselves of this physical disposition that impostors of every description and of every country operated most of their miracles; and it was by these means that the Convulsionists of St. Médard amazed weak imaginations with the blows they received from swords and hatchets, and which in their ascetic language they called *consolations*. This was the magic wand with which Mesmer overcame habitual sufferings, by giving a fresh direction to the attention, and establishing in constitutions possessed of great mobility a sense of action to which they had been unaccustomed. It was thus also that the *Illuminati* of France and Germany succeeded in destroying external sensations amongst their adepts, depriving them in fact of their relative existence."

Fracture of the Fifth Cervical Vertebra, without displacement of the body of the bone.—The *Western Journal of Medical and Physical Sciences*, for July, 1836, contains an interesting example of this related by HIRAM A. PROUT of Tuscomb, Alabama. The subject of the case was a negro, *æt.* 30, who while wrestling with a companion, was thrown suddenly upon his neck, by having his feet tripped from the ground. The fall was immediately succeeded by a loss of motion and feeling in the shoulders and arms, in the walls of the chest and abdomen, and in the lower extremities. Though there was an entire loss of sensibility to the impression of external agents, he was subject to occasional and severe pains in all the paralyzed parts, and to constant and lacerating pains in his arms and shoulders. There was no external mark of injury over the spinous process of the fifth cervical vertebra; but a distinct crepitus was perceptible on pressure. His breathing was short and extremely laborious, being carried on alone by the action of the diaphragm. The muscles of the head and neck, above the origin of the phrenic nerve, maintained their integrity. His pulse and the temperature of his body were unaffected, until near the close of life; which occurred within forty-eight hours after the accident. On the day subsequent to the injury, he was affected with retention of urine and great abdominal distension; notwithstanding the peristaltic action of the bowels had been excited and met with no resistance from the paralyzed sphincter. There was no distension of the corpora cavernosa.

Dissection.—The rim or arch of the fifth cervical vertebra was fractured in three places, and the spinous process, with a part of the arch, was driven in upon the spinal marrow. There was a slight effusion of blood, between the sheath of the spinal marrow and the bone, and a considerable effusion between it and the substance of the cord. There was no material lesion of the medulla or of its investigating membranes; and the body of the bone was not fractured or displaced, at the intervertebral junction.

Professor HARE, by aid of his improved blowpipe, acted upon by heavy hydrostatic pressure, has succeeded in fusing platina in masses of ten and thirteen ounces avoirdupois. He exhibited to the American Philosophical Society, at a recent meeting, a mass fused by this means weighing about three quarters of a pound.

Dunghison's Medical Student.—This is a useful guide-book for medical students; containing information, which those who are about to commence the study of medicine, ought to possess. "In this humble production," the author informs us, in his preface, "his sole aim has been utility. He has been desirous of facilitating the labours of the young student in presenting a difficult profession, without any expectation that his labours would meet with much regard from the more advanced."

It includes a glossary of the terms of the science, and of the mode of prescribing; bibliographical notices of medical works; the regulations of different medical colleges of the Union, &c. &c.

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TO READERS AND CORRESPONDENTS.

Drs. Green and Dowler's communications have been received.

The following books have been received.—An Essay on the Diseases of the Jaws, and their Treatment; with Observations on the Amputation of a part, or the whole of the Inferior Maxilla; tending to prove that such operation is seldom, if ever, necessary—with two Plates. By LEONARD KOECKER, Surgeon Dentist, M. D., &c. London, 1828. (From the author.)

An Essay on Artificial Teeth, Obturators and Palates, with the Principles for their Construction and Application, illustrated by 26 Cases and 21 Plates. By LEONARD KOECKER, Dentist, &c. &c. London, 1835. (From the author.)

Elements of Surgery. By ROBERT LISTON, Fellow of the Royal Colleges of London and Edinburgh, &c. &c. E. L. Carey & A. Hart, Philadelphia, 1837. (From the publishers.)

A Treatise on Insanity, and other Disorders affecting the Mind. By JAMES COWLES PRITCHARD, M. D., F. R. S. E. L. Carey & A. Hart, Philadelphia, 1837. (From the publishers.)

Observations on the Operation of Lithotomy, illustrated by cases from the practice of Prof. B. W. Dudley. By JAMES M. BUSH, M. D. (From the author.)

Lecture Introductory to the Course on Pathology and Practice of Medicine in the University of Virginia, for the Session of 1837–8. By R. EGLESFELD GRIFFITH, M. D. Published by the Class. Charlottesville, 1837. (From the author.)

Introductory Lecture to the Course of the Institutes of Medicine, delivered in the University of Pennsylvania, November 6th, 1837. By SAMUEL JACKSON, M. D. Philadelphia, 1837. (From the author.)

Introductory Lecture to the Course of Surgery, delivered in the Chemical Hall of the Washington Medical College of Baltimore. By JOHN W. DUNBAR, M. D., Prof. of Surgery and Surgical Anatomy, and Surgeon to the College Hospital. Baltimore, 1837. (From the author.)

A Clinical Lecture on the Primary Treatment of Injuries, delivered at the New York Hospital, November 22, 1837. By ALEXANDER H. STEVENS, M. D., Surgeon to the New York Hospital and emeritus Prof. of Clinical Surgery.

Clinical Guide, for the use of Pupils engaged in the Study of Clinical Medicine, or Preparing for Examination. By W. W. GERHARD, M. D., one of the Physicians to the Philadelphia Hospital, &c. Philadelphia, 1837. (From the author.)

Annual Circular of Washington Medical College of Baltimore. September, 1837, Baltimore.

University of Maryland, under its Original and Perpetual Charter of 1812. An Introductory Lecture, delivered before the Medical Class of the University, November, 1837. By SAMUEL GEORGE BAKER, M. D., Professor of Materia Medica and Therapeutics. Baltimore, 1837. (From the author.)

Practical Elocution, or a System of Vocal Gymnastics, comprising Diagrams Illustrative of the Subject, and Exercises designed for the Promotion of Health, the Cure of Stammering, and Improvement in Reading and Speaking. By ANDREW COMSTOCK, M. D. Second edition. Philadelphia, Kay and Brother, 1837. (From the author.)

Catalogue of the Officers and Students of Dartmouth College, 1837–8.

Circular and Catalogue of the Faculty and Students of the College of Physicians and Surgeons of the Western District of the State of New York, in Fairfield, Herkimer county, 1837–8. Albany, 1838.

Gazette Médicale de Paris, July, August, September, and October, 1837. (In exchange.)

Bulletin Général de Thérapeutique Médicale et Chirurgicale, July, August, and September, 1837. (In exchange.)

Journal des Connaissances Médico-Chirurgicales, August, September, and October, 1837. (In exchange.)

Journal de Pharmacie, July, August, and September, 1837. (In exchange.)

Journal de Médecine et de Chirurgie Pratiques, August and September, 1837. (In exchange.)

Journal des Connaissances Médicales Pratiques et de Pharmacologie, October, November, and December 1836, January, February, March, April, May, June, and July, 1837. (In exchange.)

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The Edinburgh Medical and Surgical Journal, for October, 1837. (In exchange.)

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The Western Journal of the Medical and Physical Sciences, July, August, and September, 1837. (In exchange.)

The Select Medical Library and Eclectic Journal of Medicine, November and December, 1837, and January, 1838. (In exchange.)

The Southern Medical and Surgical Journal, September, and November, 1837. (In exchange.)

The Boston Medical and Surgical Journal, November and December, 1837, and January, 1838. (In exchange.)

The Medical Examiner, No.'s 1 and 2. (In exchange.)

Authors of new medical books, desirous of having them reviewed or noticed in this Journal at the earliest opportunity, are invited to transmit to the *Editor* a copy as soon after publication as convenient, when they will receive prompt attention. Under ordinary circumstances, very considerable delay is caused by the circuitous routes through which they are received.

Papers intended for publication should be sent, *free of expense*, as early after the appearance of the Journal as possible, in order to be in time for the ensuing number. Such communications should be addressed to "CAREY, LEA & BLANCHARD, Philadelphia, for the *Editor of the American Journal of the Medical Sciences*." All letters on the *business* of the Journal to be addressed exclusively to the publishers.

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- XV. A Letter respecting Santa Cruz as a Winter Residence for Invalids; addressed to Dr. John C. Warren, of Boston, Mass. By Joseph Tuckerman. Boston: 1837. 8vo., pp. 27 - - - - - 452
- XVI. A Practical Treatise on the principal Diseases of the Lungs, considered especially in relation to the particular tissues affected. By G. Hume Weatherhead, M. D., Member of the Royal College of Physicians; Lecturer on the Principles and Practice of Medicine, and on Materia Medica and Therapeutics at the Blenheim Street School of Medicine, &c. John Churchill. London: 1837. 8vo., pp. 181. One coloured plate - - - 453
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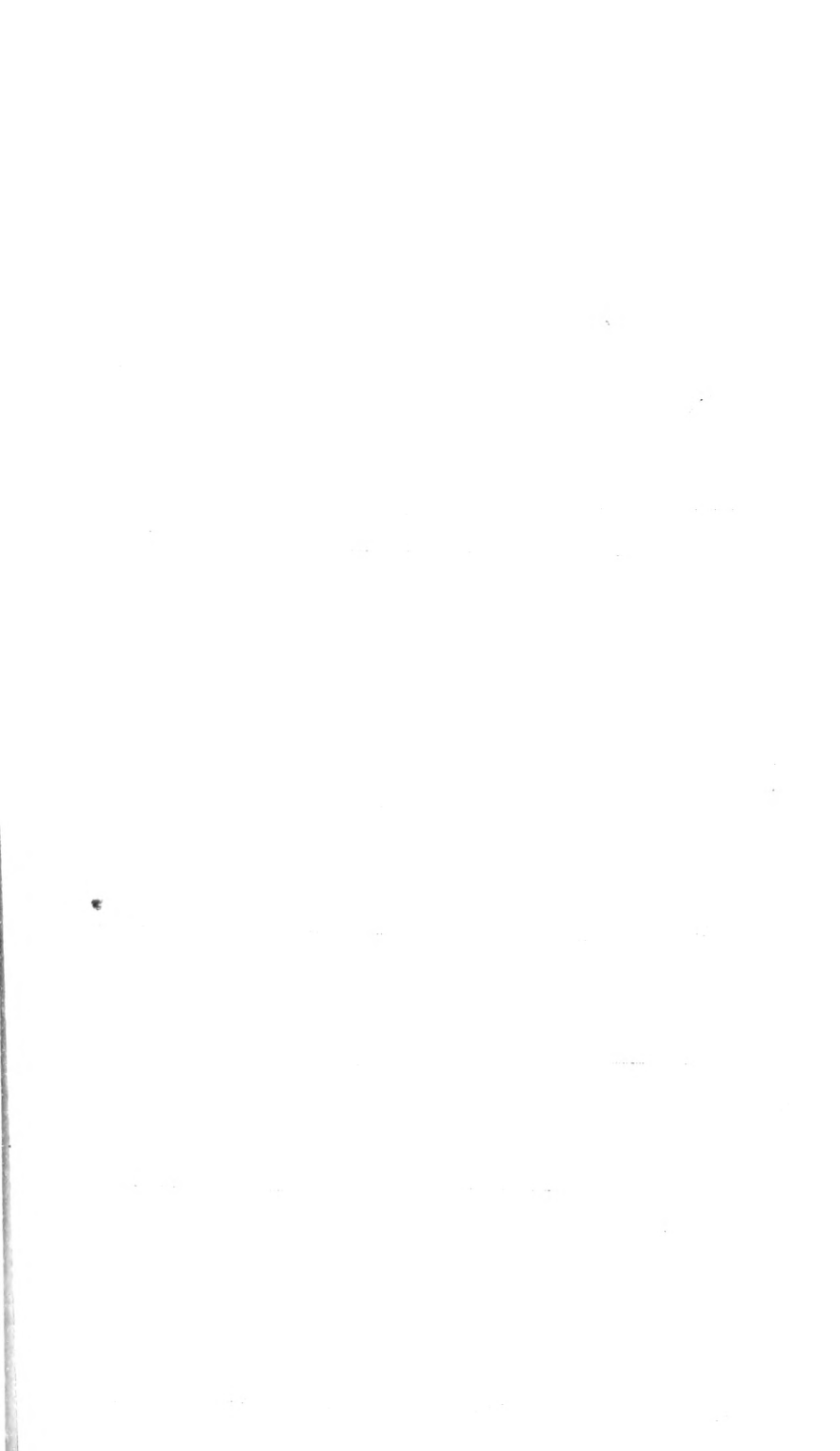
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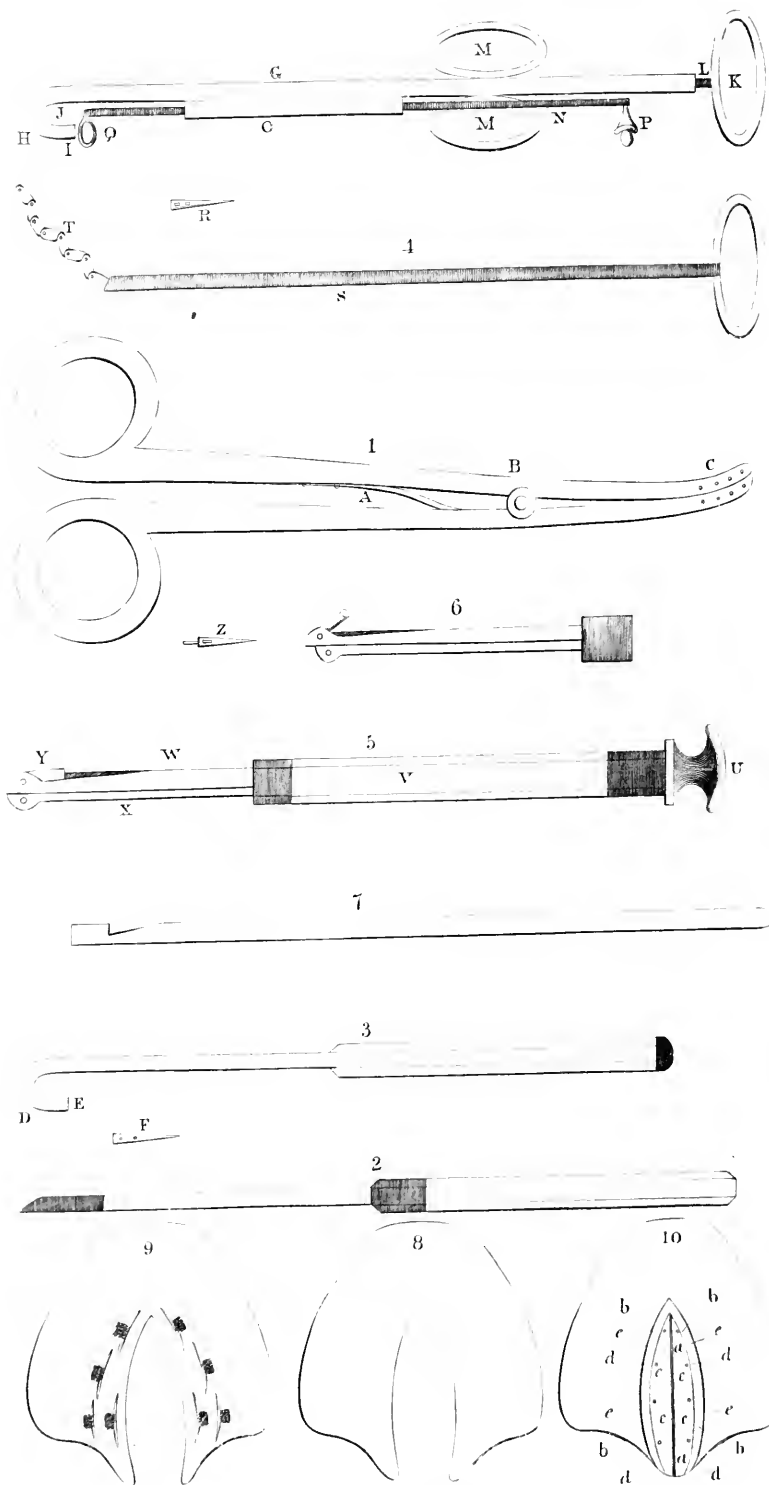
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ARTICLE I. *On the Physical action of Capillary Systems.—Identification of the force producing motion with the chemical force.* By JOHN W. DRAPER, M. D., Professor of Chemistry and Physiology in Hampden Sidney College, Va.

1. It has been alleged, as a bar to all physiological investigation, that the phenomena of life are of so peculiar a nature, that we must necessarily forever remain ignorant of their causes; that, unlike physical phenomena, which are of a simpler caste, and more within the reach of human understanding, there is something in these inherently mysterious and incomprehensible. This unphilosophical impression exists not only in the minds of the vulgar, but has extended itself to men well trained to scientific research: it is to be found in the writings of the most eminent physicians, and often affords a plausible screen for professional ignorance. Of all the sciences, medicine is the last to profit by the analytic method—a method which has raised other departments of knowledge to their present rank. Its cultivators pursue the same course of synthesis which was pursued in the days of the Greeks—they reason from hypothesis to fact, instead of from fact to hypothesis.

2. It may, however, be boldly averred, that the science of life is not more occult than any other of the sciences. We may, by proper investigation, carry it as far; and in the pursuit we shall only stop short at the very same point which has proved impassable in them.

Of final causes we know nothing; the immediate agent of life is not more obscure than any of the remote physical agents. If we cannot assign any reason why a seed germinates, can we tell why a stone falls to the earth?—is the one phenomenon any more comprehensible than the other? If we cannot tell how it is that one parent should produce a countless offspring, each of which has the power of reproducing beings like itself, neither can we tell how a spark produces an extensive conflagration. It avails us little to say that the principle of life, like the principle of heat, possesses a radiant character, or has a power of self-production. We are equally ignorant how the wide spreading flame results from a spark, and how countless myriads of seeds have originated from one primordial germ.

3. Some parts of the science of physiology are doubtless within the reach of scientific investigation. Most of the functions of organic life are of this character. Absorption, secretion, circulation, and respiration are carried on through the medium of tubular arrangements of different kinds, endued with specific powers. We are not well informed of the nature of these actions, or of the force giving rise to them. The changes taking place in organic structures partake partly of a mechanical, partly of a chemical aspect, bearing some similarity to other physical changes effected by known agents, yet not identical with them. Some have supposed that the attraction of affinity, or the force of capillarity, was the power in question, operating in an unusual manner, under unusual circumstances; but the majority of medical writers have cut the knot, instead of untying it, and assert that it is a peculiar force, recognised under the title of vital force, life, or nature.

4. It is, however, most unphilosophical to resort to these vain explanations, which after all afford us no information, substituting only obscure terms as the causes of events not more obscure. Had we approached the problem of pore-action in the same spirit that has led to the developement of the causes of magnetic action, a similar and equally striking advance would have been made.

5. Capillary attraction, considered simply as a mechanical force, is not competent to produce those changes which the pores and narrow cylinders of organic structures give rise to. The products of glandular action are chiefly compounds of a definite number of equivalents, bearing a strong resemblance to the products of ordinary chemical action; but still the operation of capillarity as a force producing motion is undeniable. Can it also produce chemical changes? Is it simply a manifestation of the electric chemical relations of matter?

6. Previous to entering at large into an examination of the laws of pore-action, this query will demand an answer. We shall find from what follows, that capillary attraction is a force nearly allied to, if not identical with, chemical affinity. Now, the investigation of the problem of pore-action naturally divides itself into two parts. 1st. The mechanical conditions of equilibrium and movement of fluids residing in tubes of narrow diameter, but of any length. 2nd. The chemical changes which fluids so situated undergo.

7. The identification, therefore, of the force producing the mechanical effect, with that producing the chemical changes, is a most important point, and to this I shall direct my attention in the present communication.

8. There are two phenomena of capillary attraction, the conditions and circumstances of which are well known—the rise and depression of fluids in tubes of a certain diameter, and the adhesion of flat solid plates to the surface of fluids. From the former of these this kind of attraction has derived its name; the latter furnishes us with the means of making researches, devoid of ambiguity, in reference to the physical cause of capillarity.

9. If a circular disk of glass, or any other solid substance, *Fig. 1*, *a b*, be placed on the surface of any fluid, *e f*, by means of a handle *c*, it will adhere thereto with a certain force, which may be measured by means of a balance, but which is sufficiently evident when attempts are made to lift the disk with the hand. This force is known under the name of capillary attraction. An investigation of its physical cause, and the laws respecting it, involve the fundamental propositions of pore-action and passage through tissues.

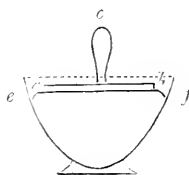


Fig. 1.

10. The phenomena of capillarity are brought about by electricity, operating under peculiar circumstances. They are due to a disturbance of the electric equilibrium, and hence are intimately allied to all kinds of chemical and vital changes.

11. Let *a b*, *Fig. 2*, be a glass plane, reposing on the surface of mercury, *c d*, contained in an insulated vessel, and capable of being elevated by an insulating handle *e*; let the mercury be connected with an electrometer *f*, by means of a wire. Now, so long as the glass plane and the mercury are in contact, the electrometer evinces no disturbance; but

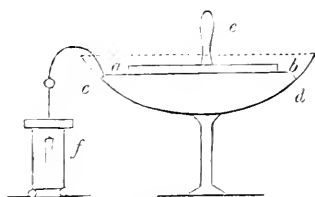


Fig. 2.

as soon as the plane *a b* is raised by its insulating handle, electricity is instantly developed, and the gold leaves diverge. As there was no electrical excitement whilst the plane and the metal were in contact, it is a legitimate inference that the electricity now developed was the cause of their strong attraction or adhesion; and this is corroborated on taking the glass plane to another electroscope, when it will be found that it is electrified positively and the mercury negatively; and that consequently when they are brought into the vicinity of each other, a powerful attraction *must* result.

12. A cause of attraction being thus developed, it would be very unphilosophical to seek for other agencies where one so competent to produce all the effects is observed to exist. For in every case where a solid plane reposes on the surface of a fluid not wetting it, a large amount of electricity of very high tension is produced, the electricity of the surface of the plane being always opposite to that of the liquid. *They must therefore attract each other.* I express here only a fact, not involving any disputed hypothesis whatever, as to whether that developement of electricity originates in the mere contact of the bodies, their chemical action, or any other cause; but it is a fact, that when any solid reposes upon any fluid, provided its surface does not become wetted, a developement of electricity uniformly takes place, and a powerful degree of attraction must necessarily ensue.

13. The postulate here introduced requires explanation, for electric excitement is not observed if the solid surface is wetted. Solids bear a peculiar relation to liquids, being wetted or not wetted by them. Most solids, for instance, are wetted by water, and but few by mercury; the surface of the glass is readily moistened by alcohol or oil, but not by melted sulphur or mercury: hence the latter, from its not adhering to the skin, was called by the older chemists *aqua non madifaciens manus*. The circumstance, that no electrical excitement is observed when a solid surface is wet, might appear at first sight contradictory to the hypothesis here assumed. A more accurate examination, however, places it in a very different light, and shows that the phenomena observed are exactly such as they ought to be hypothetically. If a disk of glass is placed on the surface of water and then removed, the gold leaves of the annexed electroscope are not affected, for, strictly speaking, no rupture has taken place between the solid and the fluid; the thin film of the latter in contact with the former still remains so: it is only the cohesion of the watery particles that is overcome, not the adhesion of the solid to the fluid, and hence no electrical developement appears.

14. Geometers have shewn the exact relation a solid must bear to

a fluid to be wetted by it. It results from the mathematical investigations of CLAIRAULT, that if the attraction of the particles of the solid for those of the fluid is more than half the attraction of these last for each other, the solid will be wetted; but if it be less than half, the solid will not be wetted. An experimental proof of this may be ob-

tained by counterpoising a disk of glass *a, a*, Fig. 3, at the end of one of the arms of a balance, by weights in the scale *b*, and then lowering it on the surface of some mercury in a cup *c*; it will be found that a certain weight must be added in the scale *b* to detach it. Next in place of the disk of glass, substitute a

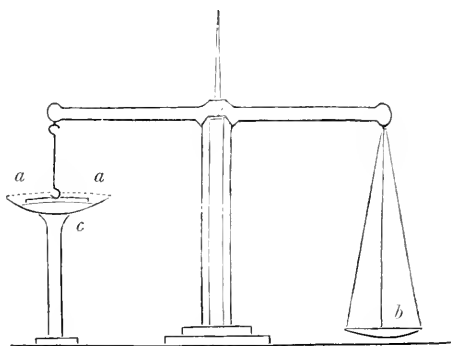


Fig. 3.

plate of *amalgamated* copper, of the same size and weight, and ascertain the force required to detach it; this will uniformly be found more than double the former weight. The first weight expressed the attractive force existing between a surface of glass and mercury; the second the cohesion of a cylinder of mercury of the same diameter, and the numbers obtained experimentally corroborate the investigations of Clairault.

15. I dwell on this part of the phenomenon because it is of no small importance; the same conditions that determine whether or not the surface of a solid is to be wetted, determine also whether a liquid shall pass through a pore, and move forward in a capillary vessel.

16. The difficulty arising from the non-developement of electricity, where the solid surface is wetted, being thus dismissed, we next enquire whether the hypothesis here assumed will give numerical results analogous to those procured by experiment. In other words, if two solids which adhere to a certain fluid, with forces differing in amount, develop upon rupture, quantities of electricity in the same ratio. As a general result, the balance and electrometer prove that this is the case. Beeswax, which adheres to mercury with much less force than gum lac, develops likewise much less electricity. Gum lac, which adheres less strongly than glass, likewise develops much less electricity; but when we attempt to run a comparison in this manner along a series of substances, we find there are many disturbing causes, which in most cases incapacitate us entirely from making comparable results.

Much depends on the relative conducting power of the surface employed. A plate of iron may be separated from a surface of mercury, which does not wet it, with a very small disturbance of electric equilibrium, arising from the high conducting power of the metallic plate, which enables a transfer of any free electricity to take place if the plate should tilt on one side, or any thing affect its horizontality during the act of separation. In proportion as the conducting power increases, although the force of adhesion may remain the same, the total effect on the electrometer should diminish; and this is agreeable to experience. Again, the presence of moisture on any part of the touching surfaces will vitiate the results; partly owing to its high conducting power, but chiefly to the circumstance that it hinders the surfaces under trial from ever coming into contact.

17. The circumstance of this great variability in the amount of developed electricity, is in itself strong evidence of relationship between the supposed cause and the effect. Gay Lussac found that it required a weight sometimes of 158 and sometimes of 296 grammes, to detach a certain disk of glass from mercury, depending on causes which were not very apparent. An effect thus differing in amount indicates a cause of like variability, or subject to many disturbances.

18. I assume, therefore, that the agent bringing about capillary phenomena is identical with that producing chemical action, and that both may be referred to electricity. The force of cohesion bears the same relation to both, acting on both as a disturbing power. Nay, we may even take a much more extensive view of the matter; and from the ratio these forces bear to each other, predicate the effect of their combined action, which may be classed under three distinct heads.

1stly. If the force of attraction of the particles of a solid, for the particles of a fluid, be not equal to half the cohesive force of the latter, for each other, the fluid will refuse to pass through a pore of that solid substance; and in capillary vessels consisting of it, will be depressed below its hydrostatic level.

2ndly. If the force of electric attraction of the particles of a solid, for the particles of a fluid, exceeds half the cohesive force of the latter for each other, but is not equal to the whole force, the fluid will pass through a pore formed of that solid substance, and in a capillary tube of it, will rise above its hydrostatic level.

3dly. If the force of electric attraction of the particles of a solid for the particles of a fluid, exceed the whole cohesion of the latter, *chemical union* ensues.

19. In thus assimilating the force producing pressure on planes,

and motion in narrow pipes, with the force producing chemical changes in the constitution of bodies, a great advantage is gained in simplifying physiological investigations in respect of the action of capillary systems. It is an electrical force that determines all kinds of constitutional changes developed in bodies by the chemistry of organic life, and it is a manifestation of the very same force that carries some fluids along the almost invisible vessels of living structures, and denies to others a passage. All the phenomena of inorganic chemistry are the result of the balancings of the force of cohesion on the one hand, and electrical attraction on the other. If Berthollet was wrong in supposing that chemical affinity as an acting force had no existence, other chemists have equally erred in supposing that all kinds of changes, without any limitation, were due to it. Whether we investigate the phenomenon of chemistry or of capillarity, we have the same forces to deal with, acting as antagonists to each other; and hence the whole effects imputed to capillary attraction may be regarded as belonging to that extensive class which the science of chemistry considers.

20. There is a variety of facts recorded by writers on capillary attraction, which an application of these principles readily explains, though hitherto they have been regarded by philosophers as remarkable anomalies. Such is the observation of HUYGENS, that it was possible to cause mercury to stand in a barometer seventy inches high; or that of P. ABAT, of a singular deviation in the hydrostatic level of the same fluid in different branches of a syphon.

21. The force of attraction which produces pressure, when plane solids repose on the surfaces of fluids, under other circumstances produces motions of various kinds. If a tube of small diameter be plunged into a liquid, the level within the tube does not correspond with that outside, except under very peculiar and very unusual circumstances; but sometimes the liquid rises far above its level, and sometimes it is depressed, the amount of disturbance taking place in both cases being in the inverse ratio of the diameter of the tubes. All fluids which can wet the surface of a narrow pipe rise in it; those which cannot wet it are depressed. Geometers have shown, that if the attractive force exerted by the pipe upon the liquid be more than half the cohesion of the particles of the latter for each other, there will be a rise; if it is equal, the level of the fluid inside and outside of the pipe will be the same; and if it be less than half, there will be a corresponding depression. Now, extensive observation proves that these three cases are always accompanied with certain peculiarities, as respects the surface of the fluid in the tube, as is represented in

Fig. 4. In every case where the fluid rises, it is observed to be terminated with a surface concave upwards, as appears at *a a*; if the level is the same as it should be hydrostatically, then the terminating surface is a plane, as at *b b*; and if there be a depression, then the surface is convex upwards, as at *c c*. Whenever, therefore, a tube of narrow diameter is placed in a fluid, if the action of the

particles of the tube on the particles of the fluid be less or more than the attraction of these last for each other, motion ensues, and the fluid falls or rises to a height determined by the diameter of the tube.

Fig. 4. narrow diameter is placed in a fluid, if the action of the particles of the tube on the particles of the fluid be less or more than the attraction of these last for each other, motion ensues, and the fluid falls or rises to a height determined by the diameter of the tube.

22. If the tube be perfectly cylindrical, as **Fig. 5**, *a a*, and there be conveyed into it a short column of fluid *b b*, it will be found that this fluid rests in any position, provided the tube be horizontal. But if the tube be conical instead of cylindrical, as in *c c*, and a little column of fluid, *b b*, be introduced into it, then a motion of the whole drop ensues, the progress being made towards the narrow extremity. In this way capillary attraction is competent to produce motions of various kinds.

Fig. 5. 23. All these disturbances of ordinary level, and these motions, are found to result from the action of the surface of the liquid. From a consideration of these disturbances, LAPLACE deduced his theory of capillary action; a theory which, with a little modification, is now generally adopted. The thickness or thinness of the tube has no effect whatever on the phenomenon; nor does the substance of which it is composed exert any influence. Every thing is made to depend on the figure of the bounding surface, which necessarily acts more and more powerfully as the diameter of the vessel becomes narrower.

24. Capillary attraction does not take place only between solids and fluids; it is exhibited when solids alone are made use of. In virtue of this power, two pieces of lead cohere with great energy to each other, as also is the case with two planes of polished stone, or plates of glass. When glass is used, electricity of very high tension is readily detected, one of the pieces being positive and the other negative, it would, I suppose, hardly be denied, that the force operating in the case of glass is also the force that operates in the case of stones. Is it not, then, a legitimate supposition, that the adhesion of two pieces of lead is brought about by the same agent, whose presence is masked by the high conducting power of the metal?

25. Between solids and gases capillary action likewise takes place. On the surface of all kinds of solids atmospheric air remains in a state of condensation, as is made evident when such bodies are placed beneath water under an exhausted receiver; the air appearing in copious bubbles, studding the surface of the metal.

26. Now, having a power, the operation of which over inorganic masses is so extensive, it is for us to enquire how far the phenomena of organic systems depend upon its working. Those numerous pores and pipes, and capillary vessels, which abound in all kinds of living structures, but of whose action we are so ignorant, point out to us capillary attraction as one of the great forces in play, determining all kinds of motions and physical changes. To identify the force producing motion of a mechanical character, with that effecting physical change, gives a unity to the action of powers which have hitherto been multiplied without avail, and stamps simplicity and symmetry on actions that are very diverse.

27. Hitherto we have treated of capillary attraction as a force producing certain simple results, as the adhesion of pieces of metal, or of plane solids to the surface of fluids, or the rise or fall of fluids in tubes. All these consist of binary arrangements; and it is probable, as will hereafter be shown, that certain simple processes in the organic kingdom are examples of similar simple forms of action. But, arrangements of a more complex character may be imagined, and are known to exist, where, instead of there being two, three or more elements are concerned. Ternary arrangements lead to the consideration of the doctrine of endosmosis, by which we understand the passage of two fluids or gaseous bodies through a narrow channel, in opposite directions, at the same time.

28. The law of horizontality of fluids meets with a remarkable exception when the containing vessel is a capillary pipe, as has been already stated; for a change of level ensues, according as the fluid will or will not wet the walls of the tube. Laplace has shown that the immediate cause of this rise or fall is the peculiar figure of the surface of the liquid in the pipe. The theory embracing these facts will be found in the supplement to the tenth book of the *Mécanique Céleste*. M. Poisson, from a consideration of the heterogeneity of the liquids in ternary arrangements, has endeavoured to refer all the phenomena of endosmosis and transudation through tissues to common capillary attraction, but with a want of success not usual to the labours of that excellent mathematician; not that we are to deny the result to which he has arrived, for that is only the expression of a fact, but the steps of his investigation are unquestionably faulty, for the

same reasoning will apply to tubes of all diameters, and it does not satisfy the condition that both liquids shall pass in opposite directions at the same time.

29. It is not necessary to proceed here to the discussion of the remoter data of the mechanical part of this question, nor to refer to the elementary conditions of pressure upon a surface, nor to the action of solid bodies alone: though in each of these cases the investigation might readily be carried out to the conditions of motion and repose. Let us proceed to investigate the case where two fluids are adjacent to each other, but do not communicate, except through a pore. This case involves the theory of tissue action. Taking for granted the theory of Laplace, of the equilibrium of liquids in capillary tubes, we may assert,

1stly. That if two fluids *A*, and *B*, whose attraction for each other is greater than the cohesion of the homogeneous particles of either, communicate with each other through a pore, the walls of which attract the one more than the other, motion through that pore will ensue, both liquids passing at the same time in opposite directions.

2ndly. If we take particles receding from the axis of the pore, the forces soliciting any one of them to move in a direction with the axis, gradually decrease, whilst the rectangular forces increase in intensity.

3dly. In the axis of a pore any two molecules, *a* and *b*, situated in the fluids *A* and *B* respectively, are acted upon by two systems of forces—one tending to produce motion parallel with the axis, and the other at right angles to it. The forces which tend to produce motion parallel with the axis are not compensated, but all the rectangular forces compensate each other.

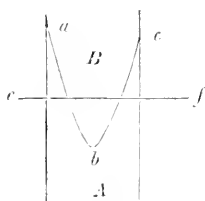


Fig. 6.

4thly. Let *a b c*, *Fig. 6*, be a section of the figure of the surfaces of the fluids *A* and *B* on contact, and through any part of it, *e f*, let an imaginary plane pass. Now, the forces which act on the side *A* of the plane tending to produce motion in *B*, are much greater than the forces on the other side tending to restrain it. Moreover, the action of these forces is at a maximum at the point *b*. The figure of contact, therefore, becomes changed, the point *b* advancing along the axis, and making the opposing particles retire in the directions of least pressure; the fluid *B* continuing to pass down the axis of the pore; and the very same reasoning shows that at the same time *A* will pass in the opposite direction. If, therefore, two fluids are on opposite sides of a barrier, and only communicate with each other by a pore through it,

motion in that pore will ensue, both liquids passing in contrary directions, simultaneously and co-axially.

5thly. And the same reasoning which applies in the case of a pore, will also apply to a cribriform plate or tissue, whose apertures are all capillary tubes.

30. In this view of the subject, as is evident, I have imputed the phenomena of tissue action to the force of capillary attraction, taking into account the heterogeneity of the system of fluids. I have not spoken of the relative difference of cohesive force, which, as might be shown, aids in producing the very same results. From these considerations we can deduce the condition of equilibrium, for it is evident that as soon as the chemical composition of the fluid on each side of the pore becomes identical, the forces soliciting motion each way, antagonize each other completely. It was the heterogeneity of the fluids that gave rise to the first movement, and kept it up; but so soon as the media on each side became homogeneous, motion ought to cease; and that this is the case, is abundantly proved by experiment.

31. With respect to the *diameter* of pores, there are some important conditions. Let *a b c*, *Fig. 7*, be a pore, whose diameter exceeds double the radius of the sphere of sensible attraction of its own particles; or, in other words, whose axis is beyond the influence of the attractive force of its own walls. If a cylindrical column of fluid, *e f g*, of a certain diameter, moves through it, the circumferential parts of that cylinder will be brought under the direct influence of the walls of the pore, but its axial portions only indirectly through the intermedium of the cohesion of the fluid itself. We may say, therefore, that the axial portions of such a cylinder are unaffected by the pore itself: but if the diameter of the pore be supposed continually to diminish by degrees, all parts of the cylinder will at last be brought within the influence of the walls of the pore. Another mode of viewing this condition of things may place it in a still clearer light. When a liquid rises in a capillary tube of certain diameter, only those portions are under the direct influence of the attractive force of the tube which are nearest to it, the central columns being entirely unaffected; as, when water jets out through a narrow pipe, it is only those portions that are directly in contact with the sides of the pipe that are subject to its resisting influences, any disturbance which the central particles feel arising only indirectly from their cohesion. A pore in a piece of charcoal may suffer a column of water to go through it without in anywise affecting the central portions of that column, by reason of its size; but should the diameter

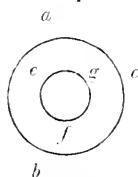


Fig. 7.

of the pore be made to decrease, it is obvious a limit might finally be reached, when every particle that passed should come under the direct influence of the physical force of the pore, and none pass by mere leakage or oozing. The importance of this element, viz: the variability of the diameter of the pore, is greatly to be insisted on. It has heretofore been pointed out in this Journal, and in the Journal of the Franklin Institute, but does not seem to have attracted that attention which it deserves. Chemists are still in the habit of co-ordinating the passage of liquids, through stucco plugs and pervious barriers, with that through tissues and liquids. Physiologists carry out the same error, in supposing that there is no essential difference in the motion of fluids in the capillaries and through the pores of tissues.

32. It is not alone in the vital functions that we meet with applications of the principles of capillary action; the mechanical functions furnish numerous instances. The organs of progression of some animals which delight to walk upon water, are provided with an apparatus of hair, calculated to repel that fluid; hence gnats and certain other insects have no difficulty in passing over the surface of water. By the same means the hydra suspends itself, without effort, in that element; for having exposed for a time the extremity of its foot to the air, so that it may become dry, it, by repulsion, forms a cup-shaped hollow around it, the head of the insect hanging down in the water beneath.

33. Organs of exhalation and absorption are unquestionably capillary systems. The stomata of plants, which botanists suppose to discharge these functions, are of this character; they furnish a well marked instance of the accommodation of apparatus to suit physical conditions. Plants growing beneath the surface of water have no stomata; but if, by any means, they reach the atmosphere and vegetate in it, these organs are produced for the purpose of discharging, under the new order of things, offices which were accomplished by other means. The spongioles of roots, acting as capillary systems, drive the fluids they absorb from the earth, through the tubular vessels of trees, with a force of several atmospheres, extending themselves at a due distance from the trunk, where they may meet with the water that falls from the leaves. In some orders of living things, which are not accommodated with distinct orifices for the reception of food, nutrition is accomplished by capillary systems. In this manner the *porifera* expose a wide surface to the seas, and draw in nutrient matter through their microscopic pores, discharging the surplus as excrementitious matter through their papillary orifices.

34. Like the lungs of the mammalia, the leaves of trees are respira-

tory organs, composed of capillary systems; their mechanical functions are not so complete, though their chemical functions may be identical. They demand no nervous cords to be spread upon them to give them motion and keep up their play; the breezes in which they tremble perform the office of carrying off the exhaled impurity, and the rays of the sun furnish them with their vital force, enabling them to effect the decomposition of carbonic acid, and provide a store of carbon for the purposes of the economy.

35. In identifying the mechanical with the chemical force of organic structures, we see another proof of that unity of design existing through the entire range of living things. Functions of all kinds are accomplished by arrangements of every sort in different classes, yet no one will deny that they all follow one original type. Digestion, as it takes place in the stomach of man, appears a highly complex phenomenon, depending, as some say, partly on the tissue action, partly on nervous and partly on other powers. But are not analogous changes wrought without all this complexity of apparatus in the hydated, which may be taken as the elementary type of the stomach; or in the *tænia*, which is a colony of stomachs? The polygastric infusorials, some of which have hundreds of these organs, and even the mammalia, do not digest more perfectly than the hydra, a carnivorous polypus, which may be turned inside out without detriment. The laws of digestion, followed by the one, are followed too by the other. If the organ of the one respects the presence of living matter, and refuses to act on it, so does the other; yet the one is furnished with a highly complicated assemblage of muscular bands, of glandular apparatus, of blood-vessels, of nerves, and the other is not.

36. In the higher orders of life processes are carried on by multiplied apparatus, without, however, deviating from the principle of the original simple type. The gift of a new faculty, or the addition of a new organ, brings with it a corresponding change in the arrangement of the whole plan. An engineer, who wishes to adopt a machine to the execution of some new task, alters every part, no matter how remote it may be from the acting point, until every wheel and lever executes its work co-ordinately with all the others; the prime mover remains unchanged, though the general character of the machine may have undergone a renovation; and as all machines, no matter of how many parts they are composed, nor of how many wheels they consist, nor how intricate soever may be their resulting motions, may have their power reduced to and represented by a simple lever, so also organic functions, though often brought about by highly complex arrangements, find simple representatives in the lower orders of life.

A concentration, or a developement of any organ, is often demanded by change in a remote part of the fabric, when even the connexion may not be very evident. Animals, consisting simply of digesting cavities, require no vascular system for propelling or containing a nutritious fluid; they are not in need of separate tissues, devoted to its oxygenation, nor of an insulated respiration, nor do they demand distinct biliary organs; when the nutritious chyle is produced in the stomach of zoophytes, it finds its way into the intercellular spaces, and there circulates without vessels, undergoing through the external tegument the chemical changes. In many insect tribes, the bronchial tubes are spent upon the peritoneum, and respiration takes place directly upon the alimentary canal. With modification of functions, change of external figure is always involved; and as these progress together, systems of living things are constructed, referrible to one common original type. It is thus, in the echinodermata, we trace up successive steps, from the sea urchin to the asterias, and from that to the pentacrinite; a developement of the same parts of the structure continually taking effect, until the extremes bear no sort of resemblance to each other.

37. Had the production of living things been effected by the operation of second causes, we might look with LAMARCK, for some law of successive developement, which should contain the origin of each order and species. We might regard the rudimentary teeth of whales, or the subcutaneous feet of the ophidia, as abortive results of such a law. Considering the brain as a developement of the spinal axis, we might trace in the form of the cranial bones, a developement of a system of vertebræ, brought about as a consequence of the very same laws. We might run a parallel of analogies, between the crustaceous and vertebrated animals, and exogenous and endogenous plants; we might take the cephalopodous mollusks, as furnishing the first rudiments of an internal skeleton, and trace its increasing complexity to meet certain ends, until its perfect developement in the mammalia. In this latter class, we might dwell upon the uniform existence of seven cervical vertebræ, as giving evidence of a persistence in the plan of structure, in species so remote from each other, as the cameleopard, the whale and the mole. Parting from the dorsal vessel of insects, the first rudiments of an aorta, we might follow out the complications of the higher arterial systems. In all the varieties of respiration, whether aquatic, aerial, or mixed, we might see the reproduction of one original chemical design, and in every instance of a concentration of machinery or functions, we might find an impress of the action of external formative agents.

Hamden Sydney College, November 20th, 1837.

ART. II. *Case of complete division of the Pharynx, above the Larynx; loss of the Os Hyoides, and a portion of the Epiglottis cartilage, by Sloughing; recovery.* By ISAAC G. PORTER, M. D., of New London.

On the 13th June, 1837, C. H., a large, muscular man, a native of Pennsylvania, of German parentage, under the combined influence of despondency and momentary inebriation, attempted suicide by cutting his throat with a razor, with which he was shaving. Two incisions were made on a line with the os hyoides, and immediately above it; the first extending from a point within one-third of an inch of the left carotid artery, to a point on the other side of the throat, so near the right carotid, that it was seen pulsating in the angle of the wound. The second incision followed the same course, separating the deeper seated parts. A portion of the epiglottis cartilage was cut off, and the remainder, which was attached to the os hyoides, was, in progress of time, removed by sloughing. The pharynx was divided, and the vertebræ of the neck almost laid bare. The man fainted from loss of blood, and being alone, lay for many minutes insensible, and without assistance. When medical aid arrived, the lips of the wound, which had ceased to bleed, were partially drawn together by the interrupted suture.

14/h. Early this morning the writer first saw the patient; the injury had been inflicted the evening previous. The wound was then gaping, a single suture only remaining, the others being torn out by a violent cough, caused by bloody serum flowing into the trachea. The patient's countenance was pale and haggard in the extreme; he was pulseless at the wrist, and his extremities deadly cold. A slight pulsation, or rather fluttering, could be perceived at the elbow. Breathing through the wound, he was, of course, speechless; but he was perfectly conscious, and had signified by writing that he thought himself dying. Desperate as was the case, yet the man's penitence and strong desire of life, stimulated to action. A stomach tube was introduced, its extremity being guided into the lower portion of the pharynx, by acting through the wound, and through this a quantity of wine and toast-water was injected at intervals. There will be no doubt that the pharynx was completely divided, when it is stated that between its extremities, the head being thrown back, the stomach tube was visible for more than an inch. In five hours the pulse at the wrist became perceptible; and after reaction was established I drew together the extremities of the wound by means of sutures and adhesive

plasters; the latter of which, however, owing to the profuse discharge, proved of little service. The chin was also brought forward upon the sternum by means of bandages applied around the head and beneath the axilla. In the afternoon there was a severe convulsion, continuing ten minutes; the muscles of the body tonically contracted. In an unguarded moment, early in the morning, the stomach tube was withdrawn from the mouth, and it was subsequently introduced through the wound. In this manner he was fed through the day with gruel; and at night an injection of mutton broth with a teaspoonful of laudanum was administered by the rectum, and retained.

15th. Passed a restless night; much floccilatio and subsultus tendinum; another severe convulsion occurred, followed by tetanic symptoms. There is at present an inability to open the mouth; much stiffness about the angle of jaw, and teeth firmly clenched. Has complained from the first of excruciating distress in epigastrium, which continues. Large quantities of laudanum were administered by stomach-tube and rectum, which alleviated the violence of the symptoms. In the evening bowels ordered to be moved by a purgative injection.

16th. Commenced feeding him by means of a gum elastic syringe, having a moveable pewter pipe and a large elastic catheter, introduced into the stomach through the wound. The catheter and pipe were attached to each other by several coatings of leather, extending over one extremity of each. The former being introduced, the elastic bottle was filled with gruel or mutton broth, and after being screwed upon the pipe, was speedily emptied by pressing out its contents. To-day the patient, in despair, removed the bandages which confined the head; every suture tore out, and the wound gaped as wide as ever. My friend, Dr. E. North, who was so kind as occasionally to visit the case in its progress, now saw the patient with me for the first time, and advised perseverance. Two sutures were fixed in each extremity of the wound, and the central portions secured as well as possible by position, and the head by an appropriate bandage. Owing to the division of muscles and ligaments, the larynx fell considerably below its true position, so that it could not be brought into contact with the upper lip of the wound. Patient still fed by the catheter introduced into the stomach through the wound. A tenacious, muco-purulent matter is expectorated from the lungs in large quantities. From the first his mouth has been frequently moistened by means of a sponge; but he now takes drink into his mouth, a part of which enters the stomach; the larger part being voided through the wound. Entering the larynx, which it does in small quantities, it produces cough. A

similar effect results from the secretions of the wound; but it is a great relief thus to wash and cleanse its surface.

18th. Chills and high fever; tongue thickly coated with brown fur; pulse full and strong; pain in stomach severe; much dejected in mind. Ordered sulph. magnes. \bar{z} i. This operated efficiently; and at night, forty drops of laudanum, the usual anodyne at the hour of sleep, was administered.

20th. Revived and cheerful. Ordered ol. ricini \bar{z} i.

21st. Refuses nourishment oftener than once a day; complains of sense of fulness in the stomach, and that food makes him cough. Diet to be entirely vegetable.

23d. Has a violent pain in the lower portion of the right lung, with decided pleuritic symptoms; cough much increased, and very painful; expectoration tinged with blood; tongue black; circulation more hurried and full. A blister, with tart. antim. and squills, relieved the urgency of all the symptoms.

24th. Sutures continue to give way by ulceration. Granulations beginning to be profuse. To-day was fed, for the first time, by the mouth by means of a catheter and copper wire introduced into it, and curved within an inch of its extremity. By withdrawing the wire gradually, the catheter was kept curved in the mouth, at the same time strength was imparted, so that it passed readily into the stomach. So easily was it accomplished that the operation was soon entrusted to the patient and his attendant.

27th. Os hyoides, together with part of the epiglottis cartilage, came away by sloughing, and the former is now in my possession. Thus a freer passage is afforded into the lungs.

29th. Functions of bowels perfectly regular without medicine; sleeps well at night, no anodyne having been given for a week. A baker's rusk, soaked in tea, was taken, nearly the whole of which entered the stomach. He is fed chiefly with mutton broth.

July 1st. Nothing has yet been said of a singular appearance, in one respect, of the lower surface of the wound. The passage into the stomach is denoted by a chink or depression, situated between two hemispherical bodies, resembling in size and appearance the half of a small cherry. These were perfectly smooth, and at this date much more swollen and red, than earlier after the accident. They are the pareties of the pharynx covered with the everted mucous membrane.

The granulations at the top of the larynx were so profuse, at my visit in the morning, that I feared they might close the aperture into the lungs; but still did not anticipate immediate danger. On visiting him in the evening, I found him almost in the agonies of death. In-

halation becoming gradually more laboured as the granulations increased; for the deeper the inspiration, the greater the pressure of the atmosphere, causing a collapse of the parts at the top of the larynx. The patient was covered with drops of cold perspiration, and the eyes rolled up beneath the eyelid in insensibility. I immediately introduced into the larynx a pair of artery forceps, the blades of which were distended by a spring. Immediate relief followed. The forceps were kept in their position by manual assistance until the morning of the

2nd. When I had a curved tube of block tin (as an experiment) made, which perfectly overcame this tendency in the granulations to close the opening in the larynx. Besides, the patient finds it much easier to throw up the muco-purulent matter, which is secreted in the lungs, or flows thither, from the surface of the wound.

7th. To-day, taking a cigar in his mouth, he went out without permission, and walked one-fourth of a mile. Wound contracting and granulating kindly. Still he presents the singular phenomenon of a man walking about with his throat cut almost from ear to ear. Feeds himself readily, taking mush and milk, two-thirds of which enters the stomach.

No further notes were taken of the case in its progress. As the process of granulation advanced, an occasional suture was used until the wound completely healed, with the exception of three-fourths of an inch in the centre. After the walk, just alluded to, he had an attack of bronchial inflammation, the consequence of undue exposure, which threatened to become chronic. Expectoration was profuse; his appetite failed; and he was much emaciated. Under the use of opium and a regulated diet, he ultimately recovered. Owing to the facility with which he could swallow meat, without its escaping through the orifice in the pharynx, he had made a free use of it; but it invariably increased his cough. Perhaps he is indebted for his recovery to the meagre diet to which he was necessarily confined soon after the injury. At the end of two months from the accident, he had, in a great measure, recovered his strength, and with the exception, now to be named, was nearly restored. Besides the fistulous opening leading into the larynx, there was a small chink in the pharynx, between the free surface of the everted mucous membrane below, which has been described, and the granulating surface above. Small portions of saline and other fluids were pressed out in the act of swallowing, which soiled the clothes, and by entering the larynx produced a cough. The hemispherical body alluded to, as covered with a mucous membrane, was freely pencilled with nit.

argent., in the hope that granulations might sprout up and unite with those from above, and thus close the opening. Failing in this, the use of the actual cautery, as applied by Dieffenbach to the cure of intestinal fistulæ, occurred to my mind, and the whole surface was seared with a hot iron. But few granulations resulted, which, however, contributed to close the crevice, and this was now diminished to one-fourth of an inch in length. Four days since, at his request, the cautery was a second time applied. This will probably accomplish the object, although it must be left for others to decide the point. The patient is a clothier by trade, and finding no employment in that line of business, he endeavoured for a month to find occupation as a wood-sawyer; but not being very successful he suddenly decamped, without informing his host, definitely, whither he was going. Wherever he may be, he is painfully conspicuous from his loss of voice, and the metallic tube through which he breathes.

The foregoing case, although standing alone, throws, it is conceived, some light on the proper treatment of such injuries. Unprofessional persons thought the suture used too sparingly. It is, however, my opinion that had it not been used except in the extreme angles of the wound, and the rest had been trusted to position, that the cure would have been just as rapid and complete. As granulations formed, sutures became necessary to secure the lips in contact. But in wounds so extensive, and involving portions of the body, which with the best adjusted means cannot be preserved entirely motionless, all attempts at closure, (except in the angles,) by the first intention, will prove utterly futile.

It is asserted by Broussais, (Physiology p. 277,) that "if we make an opening into the trachea, or the crico-thyroidean membrane, the voice is lost. An incision made between the thyroid and the os hyoides, does not destroy it. The section of the arytenoids allows it to remain, while a more profound lesion of them abolishes it." The incision, in this instance, being *above* the os hyoides, the arytenoids must have escaped entire; but not the least sound, except a flat disagreeable wheezing, in excited respiration, or in coughing, has been made since the accident. Perhaps it is to be ascribed to the division of the superior laryngeal branches of the par vagum. According to the experiments of Mr. Haighton, however, (Memoirs of Medical Society of London, Vol. III.) referred to in Wistar's Anatomy, it appears "that the *recurrent* branches supply parts which are essentially necessary to the formation of the voice, whilst the laryngeal branches supply parts which merely influence its modification or tone."

The case affords an interesting exemplification of the connexion of

the portio dura, or respiratory nerve of the face, of Sir C. Bell, with the acts of respiration, together with its distribution to the nostrils, the larynx and trachea, and the sympathy consequently existing between them. In deep, or laborious breathing, particularly soon after the accident, although all the air was received into the patient's lungs, through the opening leading into the larynx, yet the nostrils expanded and collapsed nearly as much as if it had entered in the *ordinary manner*.

An additional fact is furnished in relation to the sensibility of the lining membrane of the larynx. Although a drop of water, or a crumb of bread, passing accidentally into the glottis, produces a most violent cough, yet a tube, one-third of an inch in diameter, was worn almost constantly in contact with that part, without having caused, except for a few moments after its first introduction, either irritation or pain.

The loss of the os hyoides with recovery is an uncommon, if not an unique occurrence. Some of its offices and uses are thus described in a popular work, (Bell's,) on anatomy.

"It is the centre of the motions of the tongue, for it is the origin of these muscles, which compose chiefly the bulk of the tongue; of the motions of the trachea, or wind-pipe, for it forms at once the top of the wind-pipe and the root of the tongue, and joins them together; of the motions of the pharynx, or gullet, for its horns surround the upper part of the gullet, and joins it to the wind-pipe; and it forms the centre for all the motions of the throat, in general; for muscles come down from the chin to the os hyoides, to move the whole throat upward; others come up from the sternum, to move the throat downwards; others come obliquely from the coracoid process of the scapula, to move the throat backwards, while the os hyoides still continues the centre of all these motions."

Notwithstanding this, its loss appears to be but little felt by the patient. He has, apparently, the ordinary motions of the throat; swallows without the slightest difficulty, and with the usual rising of the larynx. The tongue also can be protruded, but not to its full extent.

It is well known that in great muscular exertions, such as lifting heavy weights, or pulling at the oar, the lungs are filled with air, and the glottis closed by bringing it, through the agency of the thyro-hyoid muscles, in contact with the posterior surface of the epiglottis cartilage. Be the ultimate object of the action what it may, it is evident that either, through remaining weakness, or from an inability to make an economical expenditure of the air in the lungs, the respiration of this unfortunate individual, while engaged in laborious occupations is, in some measure, hurried and anhelating.

New London, September 23d, 1837.

ART. III. *On Staphyloraphy*. By JOHN P. METTAUER, M. D., of Prince Edward C. H. Virginia. [With a Plate.]

Cleft palate, whether contemplated as a deformity, or as the cause of much inconvenience to its subjects, presents itself to the humane surgeon as an object demanding his most deliberate and serious attention. Certainly no congenital defect of the human form exceeds the deformity it imparts or elicits more general sympathy for the unhappy victims of it; and as a source of individual inconvenience, few if any are more prolific or disgusting.

Although surgeons early became acquainted with the existence and treatment of congenital division of the lip, a kindred affection, and not unfrequently complicating it, fissure of the palate, seems to have received very little attention as a proper object of surgery, until within the last twenty-one years.

The honour of having first performed the operation for the correction of this latter deformity, is due to Professor Graefe of Berlin. Near about the same time, (1816,) or perhaps a few years subsequently, Professor Roux of Paris, attracted attention to the same subject, and upon the operation contrived by him was bestowed the appellation of *staphyloraphy*, or *palate-suture*.

In the early history of this operation no one seems to have enjoyed such extended and ample opportunities for cultivating an acquaintance with it, or the infirmity demanding it as a means of relief, as must have fallen to the lot of this last named distinguished operator; and down to the present period it would seem that he may still maintain a decided pre-eminence, if we are to decide from the many cases reported to have been treated by him, amounting to nearly fifty in number. The reputation which Roux enjoys as an operator, and the position occupied by him as a public teacher in the great continental emporium of medical and surgical science, readily enabled him to blazon forth his operations and successes in this new achievement of science and skill, through his lectures and the journals, until a general interest throughout Europe and this country was elicited in regard to it. Soon after Roux's successes were known, other surgeons, both on the continent and in Great Britain, turned their attention to the subject; and the operations of Professors Dieffenbach of Berlin, Alcock, Mayo, and others of England; and of our countrymen Drs. Warren, Stevens, Smith, Hosack, and others, succeeding each other in rapid succession; furnish a satisfactory commentary upon the deep interest felt among surgeons to bring the operation before the profession, as a legitimate object of careful attention.

In the United States, Professor Warren of Boston, has generally been regarded as the first who operated for cleft palate, though his claims to precedence, in this respect, seem not to be fully established above those of the late Professor Smith of Yale College, who must have operated very nearly about the same time.

In 1826, the operation was performed by Dr. Stevens of the city of New York; and in September, 1827, by ourselves for the first time.

Dr. Dieffenbach seems to have been more fortunate in the contrivance of means for the easy execution of this operation, than his European brethren; and he really conferred a great benefit by the introduction of the leaden suture, porte, &c., in closing the fissure. His forceps for confining the lips while the margins are pared off, are less commendable, though they may, in his hands, have effected every thing claimed for them by him. In the United States, Drs. Warren and Hosack have made the most important contributions to our stock of instruments, for an account of which, the reader may consult this Journal, Art. I., in the No. for November, 1828; and Dr. A. E. Hosack's Memoir on Staphyloraphy, published in New York in 1833.

The *causes* of congenital cleft palate, have not yet been satisfactorily ascertained. The infirmity may result from power acting upon the fœtus in utero, through the imagination or feelings of the mother; or it may occur associated with certain congenital and hereditary diseases, in the relation of cause and effect. It doubtless is the result of imperfect developement of the part involved in the fissure; or of an arrest of the process by which the organs are unfolded; and as the causes of such an arrest are only conjectural, all is hypothesis, both as to them and the palatine fissure itself.

In considering the means for the correction of cleft palate, we shall contemplate the infirmity under three divisions, each of which will demand a treatment in some respects peculiar; that is: 1st. Division of the uvula only. 2ndly. Division of the uvula and soft palate; and 3dly. Division of the uvula, velum, palatine bones, and of the palatine process of the superior maxillary, in which the division sometimes continues entirely through the alveolar process, laying the floor of the nasal cavity completely open. In this division harelip occasionally occurs as a complicating contingency.

In division of the uvula only, the deformity presents itself in the most simple as well as remediable state. In these cases the uvula may be cleft entirely through its substance, from the apex to the base, or be only partially divided. In either case little inconvenience results, whether in modulating the voice, or in attempts at deglutition. The voice, although rendered somewhat nasal, is not so much disor-

dered as to become disgustingly indistinct; it only assumes such a state when the uvula is divided entirely through its base.

Individuals labouring under this modification of cleft palate are prone in a peculiar degree to catarrhal affections, and inflammations of the fauces, throat, and trachea. The almost constant irritation of the divided and sensitive uvula, kept up by the unequal actions and movements of this organ, will enable us to account for the almost constant disposition to cough, as well as for the various guttural affections so common in these cases. We are inclined to believe that simple divisions of the uvula are much more perturbing of the functions of the mucous membrane of the trachea and bronchi, than when the cleft extends into the velum and soft palate. In this state the uvula is very often enlarged and elongated from congestion or inflammation of its vessels.

When the cleft extends quite through the uvula, and more or less into, or to the base of the soft palate, an example of the second variety of the several modifications of the infirmity is presented. In this, as well as in the preceding, the division is confined to the median line, and separates the parts equally. The cleft is more expanded, and disposed to gape and widen as the individuals increase in stature. Its margins, too, are more or less thin, even and smooth, from the apices of the uvula to the angle in the velum. There is generally in this stage of the cleft a shortening of the soft parts, which not only renders deglutition difficult, but also greatly disorders the voice, by rendering it inarticulate and strongly nasal. Guttural articulation will be more or less imperfect in this, as well as every other modification of the infirmity, in proportion to the difficulty of closing the passage from the fauces into the nasal cavity during the efforts to enunciate. In this state these difficulties are considerably augmented; and, besides the disorders imparted to the nasal movements, they cause embarrassment in attempts at deglutition, which are often followed by accidents of a most loathsome and disgusting nature. The parts involved are disposed to excessive secretions of mucus, which, accumulating on the surfaces, becomes thickened, adhesive, and finally muco-purulent, causing foetid breath and the expectoration of prodigious quantities of tough mucus. The rapid evaporation continually going on from the fauces and nasal cavity reduces the secretions very often to the condition of solids; and, when discharged, they resemble indurated crusts upon healing ulcers. This process, too, renders respirations somewhat metalline in its tracheal responses; and when the movements are accelerated, a whistling sound is produced. Stertor is a very common respiratory phenomenon with individuals thus

affected during the sleeping state, and they invariably breathe when asleep with their mouths open.

An extension of the cleft into the palatine, and occasionally into the palatine processes of the superior maxillary bones, and in some instances even quite through the alveolar processes likewise, constitutes the third variety of congenital division of the palate. In this interesting state of the infirmity, the inconveniences and defects incident to the previously considered varieties are greatly augmented. The voice is in a very great degree unintelligible, deglutition is executed with the greatest difficulty, and, in some instances, cannot be performed at all, thereby subjecting infants to the painful death from inanition. Generally much inconvenience is experienced; and to enable persons to take substances into the stomach, it is necessary to close the anterior openings of the nostrils, especially when fluids are to be swallowed.

In this state the cleft consists not so much in a division of the textures involved, as of actual deficiency or want of substance. The cleft is more or less extensive, and generally presents a chasm of appalling magnitude, the margins of which in many instances cannot be approximated or brought into contact, as in the varieties already considered, even when very great force is employed in the efforts. In some instances the fissures are bounded by narrow margins, which only serve to point out the dividing line between the nasal and faucial cavities, without affording any material portion of the natural septum; and they meet anteriorly, to form an angle more or less obtuse.

As far as our observations have extended, it is questionable whether these last varieties of the cleft do not impart less disturbance to the constitutional health than those of more limited extent. In these examples the uvula is so reduced in magnitude and modified in character, as to rob it of much of its natural and characteristic sensibility; and on this account the parts are less liable to the disorders generally induced in them in a natural state.

The conditions of the respiratory organs and movements are very nearly the same as those already noticed connected with the preceding states of the cleft. Possibly the larynx and trachea may become more arid, and the stertor during sleep louder and more sonorous, from the perfect inability of the velum to direct the air through the nasal passage on to the rima glottidis, larynx, &c. In consequence of the shortening and retraction of the uvula and velum, as well as the investing textures spread upon the palatine and other bones forming the floor of the nasal cavity, the cleft seems almost to convert the two

cavities into one; and to this peculiarity the difficulties of correcting the deformity in this state of its existence are chiefly attributable.

In no department of surgery has more inventive ingenuity in the construction of instruments been displayed, than in the operation for cleft palate, without, however, obtaining conveniences and facilities commensurate with the difficulties to be surmounted. Still the surgeon is enabled, with comparative ease, to treat most of the ordinary cases with the means now employed, but would be greatly aided in the management of every case by more convenient instruments and contrivances; and especially those generally conceded to be irremediable, or capable of only partial amelioration. It is an effort to supply some small additional aid, principally in regard to the latter description of cases, derived from our individual experience with this infirmity, which elicits the present humble contribution.

Before entering upon the examination of the surgical treatment of cleft palate, we will premise a few considerations relative to the circumstances which should favour or discourage the operation, and also touching the subject of constitutional or bodily preparation of individuals about to submit to surgical treatment in such cases.

From satisfactory trials, we are fully convinced that the most suitable age for this delicate operation is somewhere near or within the range of puberty. With females it may generally be safely attempted as early as the sixteenth year; but with males, not sooner than eighteen. To render the means demanded in the execution of staphyloraphy perfectly available, entire willingness and submission on the part of its subjects must be felt and exercised; without this, it would be next to impossibility to effect any thing in such cases. The head and body, tongue and fauces, and even the organs of respiration, require to be constrained in some degree to enable the surgeon to employ his means efficiently. An individual about to undergo the operation, should be old enough to appreciate both the suffering and painful privations connected with it, as well as the benefits likely to be conferred by it if successful.

In the selection of cases favourable for the operation, a strict regard should be had in every instance to the state of the general health. A feverish state of the system, or a depressed condition of the nutritive powers, as they never fail to retard or deteriorate the adhesive process, must invariably discourage the operation. Conditions the reverse will, if our views are correct, constitute the constitutional prerequisites most favourable for it. The operation should never be attempted while patients are suffering from cough; nor will it be safe to operate with females who have long laboured under fluor albus to

any considerable extent; or males affected with extensive suppurating and ulcerating conditions of the body, as each of these states greatly disturbs the adhesive process. Enlargements and ulcerations of the tonsils, especially if they are the result of a strumous susceptibility and catarrh, should also discourage the operation; so far, at least, as to induce a doubtful prognosis.

The success of this delicate operation will, in a very essential degree, be influenced by the season of the year at which it is performed. We therefore invariably select summer or mid-winter as the most favourable periods. These seasons being less subject to sudden and frequent transitions of temperature, the patient is less liable to catarrhal affections; and it is on this account chiefly that they should be preferred for staphyloraphy, as well as other delicate operations about the mouth, fauces, eyes, ears, &c.

From some experience we have long since unhesitatingly discarded the belief that a constitutional preparation by medicinal agencies, diet, &c., is demanded as an indispensable prerequisite to a large majority of operations. So far from subjecting our patients to such measures, we have, with few exceptions, preferred to operate without disturbing the balance of health in any way. In most surgical diseases unattended with fever, we do conceive that any change effected by medicines would essentially perturb the constitution, and induce more or less of that irritative susceptibility in its secretions so much disposed to invite traumatic fever and inflammation. Fully impressed with the importance of these views, we would advise against any reduction of the stock of constitutional vigour as preparatory to the operation for cleft palate, unless a feverish state actually demands it. The only constitutional change demanded, are such as may be rendered necessary to acclimate individuals who may possibly reside in locations essentially different from those resorted to for surgical aid. With all such it would be proper to delay the operation for some time; and possibly, too, a change of diet, as well as the administration of medicines, might be required to aid in the work of acclimation, should individuals inhabit malarial regions.

As a preparatory surgical measure, we would in some of the cases of cleft-palate, advise that the uvula and velum should be familiarized as far as possible to the touch of instruments, or of the finger. To effect this end, these sensitive organs should be frequently subjected to the application of probes, forceps, and the extremities of the figures. At first the impressions will generally prove so irritating as to provoke retching and sometimes emesis; but a perseverance in the trials will finally, and in a very short time, render the parts in a great

degree insensible, and capable of being touched without much inconvenience. This acquired insensibility will greatly aid the surgeon in his delicate manipulations; it will also lop off from the operation one of its most disagreeable concomitants, the retching, and thus at the same time accommodate the patient and surgeon. To uvular cases, and when the division extends only partially into the velum, these preparatory measures are more especially applicable.

When the operation is to be executed, the subject of it should always be seated in a chair of convenient height, with a moveable back, regulated by a screw, similar to a barber's chair, upon the upper extremity of which a head piece must be fitted for the reception and support of the head, and padded or cushioned. The most favourable exposure for this operation is a southern one: the operation may nevertheless be executed and with much ease subjected to the mild light of a northern exposure, in which situation we once operated without the least deficiency of light. The patient must be so placed that the light shall enter the mouth obliquely, or the surgeon so place himself as to contemplate the parts in a line passing near the commissures or angles of the mouth, so as not to intercept the light in its passage to the fauces with his head or hands. The period between the hours of 11 A. M. and 2 P. M., is the most favourable, as affording the best light.

After the patient is properly seated, and the head inclined upon the cushion of the sliding back of the chair, so as to give the light its direct passage to the fauces, the jaws are then to be separated and kept asunder by interposing between the teeth a soft bit of wood of convenient width, and thick enough at the edges where in contact with the teeth to prevent a rocking motion, which the inferior jaw is disposed to impart to it, and which might result in its displacement, if resting upon very thin and narrow bases. The opposing margins of this bit of wood should be parallel, and the sides and ends excavated. The ends besides being hollowed out, must be pared or rounded off to a thin smooth edge; the length of it to be from one and a half to two inches; which completes the initiatory stage of the operation.

When the cleft is confined to the uvula, or to this as well as the velum at the same time, any of the modes which have been adopted and practiced from the date of Graefe's first operation down to the present time, may be pursued. But the operation, as contrived and executed by Dieffenbach, unites more advantages than any other of which we have seen an account, and should generally be preferred in the simple examples of the infirmity. In our own hands it has been successful more than once; and in the execution by no means difficult or troublesome. As performed by this dexterous operator and dis-

tinguished rhinoplastic surgeon, staphyloraphy consists of three steps: 1st. The denudation of the margins of the fissure by paring away its edges. 2ndly. The application of the ligatures or sutures. 3dly. The approximation and confinement of the margins so as to maintain their coaptation; and so far as our own experience enables us to decide, these constitute the only safe and rational series of operative agencies adapted to such cases. The introduction of the leaden ligature by Dieffenbach, in the place of the materials ordinarily employed in this operation, we regard as one of the most important improvements which it has received. Besides the mechanical advantages of this ligature, it possesses the peculiar power of paralyzing the absorbing agencies so far as to enable it to remain longer in the animal textures without loosening, or cutting itself out, than any other known substance.

The patient being placed as described in our directions in regard to the initiatory stage of the operation, the surgeon with a delicate double hook, or forceps gently curved and perforated in several places near the extremities of the blades to enable them to retain their grasp more securely, and directed by the right hand, takes hold of one of the margins of the cleft, as near the extremities of the uvula as possible, and exterior to the edge sufficiently to expose a narrow belt between the border of the cleft and blades of the instrument. Having secured the margin, he now passes the handle of the instrument into the left hand, with which the parts are to be gently elongated by drawing them downwards and forwards until moderately tense. With a corneal knife, or an instrument of its delicacy, and possessing two cutting edges supported by a neck-like shank, and a handle of convenient size and length, he next proceeds to denude the margin of the confined lips of the cleft. This is to be effected by inserting the point of the knife as near the apex of the uvula as possible, and carrying it edge foremost quite up to the angle of the cleft, so as to separate a very thin portion of the tegumentary covering from the border of the lip, which is confined still by attachments at the angle and uvula. Great care should be taken to remove no more of the substance from the margins of the lips of the cleft than just sufficient to denude them perfectly through their whole extent. By forming the section from below upwards, the effusion of blood will not invest and obscure the delicate parts to be incised, and thus perplex the operation; on the contrary, the operation is by that means rendered more easy, certain, and precise in the execution, and may be, at a single stroke, accomplished in many instances. As soon as the section has reached the angle, the knife, by reversing the movement, may be directed to the uvula, and the denudation of

this portion of the margin effected by a continuous cut in that direction. Sometimes it will be found most convenient to effect this part of the operation with a keen pair of scissors, in consequence of the shrivelled and yielding nature of the uvula. The uvula may now be released, and all further efforts suspended until the bleeding ceases. In all cases of the operation it is adviseable to delay no more time in its prosecution and completion, than is absolutely necessary for the subsidence of the traumatic hemorrhage, and short respites from pain, as the parts soon become morbidly sensitive, and from this cause might not only greatly increase the pain of the succeeding steps of the operation, but endanger the adhesive process by predisposing to disorganizing inflammation in the parts involved in the operation.

As speedily as possible the surgeon should proceed with the denudation of the margin of the opposite lip of the fissure, which is to be executed as just described. When completed on both margins of the cleft, the portion excised should resemble in form the letter V inverted; and, if possible, must be removed entire to enable the operator to know positively that every part of the edge is denuded. The parts may now be freely washed with cold water held in the mouth, and by gently gargling with it. This represses the bleeding in a few minutes, and allays, in a great degree, the pain.

We prefer denuding the margins of the lips before inserting the ligatures for several reasons, but chiefly because by that means the possibility of dividing them is precluded; the sutures may be inserted at more equable distances from the margins, and because the most painful step of the operation is reserved for the conclusion of it. Hemorrhage, from the denuded margins, cannot be adduced as an objection of any weight to this or the first step of the operation, as it ceases in a few moments after the incisions are formed. Nor should the few moments intervening between the denudations and insertion of the ligatures form an objection to it, as they certainly cannot, or have not, in our hands at all affected union by the first intention. In Mr. Alcock's case, the partial union was the consequence of insufficient support to the denuded edges of the lips of the cleft, by reason of not inserting a sufficient number of sutures to approximate them closely and steadily, and with a force adequate to their complete coaptation. His failures could not have been the result of the denudations before the insertion of the ligatures, as the success which followed early denudation, and the pins, clearly proves that in the first operations that the margins were either imperfectly coaptated and supported, or the margins were insufficiently denuded.

We object positively to scissors as an instrument for the removal

of the margins of the lips of the cleft—so far as they have been recommended in the preceding directions excepted—as being unhandy and exceedingly uncertain in their execution: as forming a cut surface more or less convex, besides pinching and bruising the parts at the same time, which must, in some degree, interrupt their union by the first intention. Moreover, should the margins of the lips of the fissure be bounded by inequalities, or indentations exist to any extent, it would be impossible to denude them with scissors only, without removing more of their substance—already, perhaps, greatly deficient—than would be justifiable or proper.

The second step of the operation, or the approximation of the denuded margins of the lips of the fissure may be attempted as soon as the bleeding ceases. For its accomplishment the *porte-aiguille* and needle generally employed, will be found both handy and efficient instruments. Dr. Warren's *porte-aiguille* is, perhaps, as convenient as any; but it is defective in the formation of its thimble-like cavity, for the reception of the eye-extremity of the needle, without a throat or fissure on the inner aspect of the short branch, or proper needle-porte. The instrument of this construction which we prefer is seven inches long, something less than two lines, say one and a half, in diameter, with a recurvation of the porte extremity, and a branch not less than four lines in length, containing a very delicate thimble-like cavity, its whole length perfectly cylindrical, and opened on its internal face by a fissure, extending quite to the bottom of the cavity: the fissure should only admit a common sized ligature, and should be well smoothed and polished. At the handle extremity, it would be most convenient to have the shaft of the porte of an octagonal form as far as it is to be embraced by the fingers of the operator; the remainder of it may be round, and must be well polished. The recurved branch should not be parallel to the shaft, but must stand a little off from it, with a space of fully two lines in extent between them. The needle which has been employed in our operations, when it has been found most convenient to use this form of *porte-aiguille*, should be not less than seven lines in length, of sufficient diameter for the formation of eyes of convenient capacity, and should have two eyes of equal size in close proximity and near the obtuse extremity of it. The point of the needle should be flattened and rendered very delicate at its extremity, while the eyed portion of it, as far as it shall be embraced by the thimble-like cavity, must be round and formed to fill that cavity with tolerable accuracy, but not so tightly as to prevent its easy insertion into, and removal from the cavity. (See *Plate, Fig. 2.*)

From what has already been intimated, in regard to the metallic ligatures, we shall be anticipated in giving them a decided preference, as a means of approximating the margins of the cleft, and our experience with them warrants the belief of their vast superiority over every other material for such uses. Besides the advantages already considered, "They allow of being tightened or loosened at pleasure, and an opportunity, during the operation, of examining the parts without becoming soft or unmanageable, as the common ligature is apt to do, when softened by the saliva or other fluids of the mouth." The ends of the wire being twisted together after the margins are approximated, confine them securely; and if, from the supervention of a high degree of traumatic inflammation and swelling, fears are entertained for the safety of the textures, unless the sutures can be relaxed, they may be loosened at once, and without pain, simply by untwisting the ends of the wires partially, until the undue tension produced by them is relieved. The greatest convenience afforded by the metallic ligatures in the execution of this operation, results from the gradual and unyielding force exerted by them in approximating and confining the denuded margins in exact apposition; and by their enabling the surgeon to augment these agencies, from time to time, without much pain to the patient, or the least danger of disturbing the position, or the adhesive process of the parts involved in the operation. Little or no difficulty, in most cases, attends the application of these ligatures, if they be sufficiently delicate.

Besides the *porte-aiguille*, needle, and metallic ligatures already described, it will be necessary, as preparatory to this step of the operation, to be provided with several silken ligatures of a size to suit the eyes of the needle which may be used, and a pair of forceps of sufficient length to reach the uvula, without obliging the surgeon to carry the hand, with which the instrument is held, so near the mouth as to intercept his view of the parts. The silken ligatures should be well waxed, and from three to four inches in length: with one of them the needle is to be armed by doubling it in the middle, then inserting the end of it into the eye nearest the point, and drawing it through so as to form a noose five or six lines in length, and carrying it back again through the remaining eye to the side at which it was first inserted, and drawing the portion of it between the eyes close to the shaft of the needle. This arrangement places the noose and extremities of the ligature on the same side of the needle, where they hang. The leaden wire should now be appended to the noose of the silken ligature, by one of the loops previously formed at its extremities, which must be made to embrace it very closely, by gently striking the

loop at its flexure, with a bit of wood. The wires, after they are cut off, and the loops formed at their extremities, should be three inches in length. Thus arranged and armed, the needle may be inserted into the thimble-like cavity of the porte, care being taken that the extremities of the silken ligatures shall both hang through its throat. The advantages of this contrivance will at once present themselves to the intelligent reader. Fitting the socket of the porte, and the silken portion of the ligature, which may now be denominated compound, hanging through its throat, it is clear that the position of the needle cannot be varied, or a rocking motion imparted to it, when the point is forcibly urged against a body to be transfixed, as in the execution of this step of the gaumennath operation. Thus armed, the surgeon directs the porte extremity of the instrument with the right hand into the cleft, and carrying it upwards and backwards until the point of the needle clears the nasal aspect of the lip of the fissure, he turns it over the margin by rotating the shaft of the porte between the finger and thumb, giving it at the same time a lateral motion towards the lip. Having directed the point of the needle so as to transfix the lip of the cleft from one to two lines from its margin, and as near the angle as may be necessary to approximate the denuded surfaces between the points at which the needles are to enter and the angle, by a retracting movement the needle must be brought through the lip until its point presents fully a line or a line and a half on the faucial side of it. Passing the porte now into the left hand, the surgeon, with the forceps in the right, takes hold of the presenting portion of the needle, and draws it downwards and forwards from the socket of the porte, and through the lip of the fissure into the mouth. The porte must now be removed by making it retrace the movements pursued when introduced; and, without loss of time, the compound ligature should be drawn in the direction of the needle until the metallic portion of it has entered the cavity of the mouth a few lines beyond the loop. In the execution of this step, less difficulty will be incurred than might be imagined, especially in making the metallic portion of the ligature traverse the puncture formed by the needle. As soon as the slight bleeding which follows the passage of the ligature ceases, and the loop of the other extremity of the wire is connected with the noose of the same or a new silken ligature, and the porte armed with the needle, the ligatures should be inserted in the opposite side of the cleft, in the same manner, and at a point as nearly opposite to the first as possible. The two ends of the wire must now be brought together; first, by gently drawing them on opposite sides with the forceps until they remain nearly in contact, and in some degree approximate the mar-

gins; they may then be taken hold of with the forceps, and gently drawn downwards and forwards until the opposing margins are brought into contact, and the extremities of the wire below the oral or faucial surface be rendered straight and somewhat tense. Still held in the grasp of the forceps, they are next to be twisted together by a gentle motion from left to right until the denuded margins are held in contact by them. The twisted portion may now be cut off to within five lines of the noose. In as rapid succession as possible, compatible with safety, the remainder of the sutures may be applied as already described, until a sufficient number to close the cleft shall be introduced. From one to four will be sufficient to close completely a very extensive congenital cleft; but the number of the sutures, and the distance between them, must be regulated by the peculiar circumstances of individual cases. In their introduction, very especial care will be required that they shall not pucker the margins, which will certainly be the case if the points at which they transfix their respective lips are not exactly opposite. When a sufficient number to close the fissure are inserted, they must be carefully but effectually tightened in alternation, commencing at the angle, and continuing the process on to the uvula. There will be some danger of increasing the force of the ligatures to a disorganizing extent, unless some easy method be adopted for its regulation. In our operations, we have continued to apply the force by twisting the ends of the wires together until the ends thus formed stand out firmly, and, when touched with the forceps, vibrate with the spring and elasticity of the bristles of a brush, which they will not do, unless the edges are confined steadily together by them. Taking this, then, as our guide, it will be very important to observe the effects carefully,—as the wires, in this stage of their tightening, are twisted,—and not to materially increase their force subsequently. The same conditions of the projecting ends of the wires will also enable the surgeon to determine, during the secondary treatment, whether or not the sutures are doing their duty, and when they may or may not require to be tightened.

After the sutures have been well tightened, the twisted ends should be cut off with scissors, within three or four lines of their respective loops. The parts may now be very carefully washed, by repeatedly filling the mouth with cold water until the blood is removed. This completes the operation. In most cases of cleft palate, the needle-porte, which has been considered, will be found both handy and efficient. But cases occasionally occur in the treatment of which it cannot be employed with convenience or advantage, and for those examples more especially we have contrived two other needle-portes,

though they will be found equally applicable, particularly one of them, to every case in which the one already described can be used. There is an especial advantage in possessing a variety of instruments for such an operation as staphyloraphy, as it not only enlarges and extends the surgeon's resources, but inspires him with confidence in those resources, as well as increases his stock of self-possession from the belief that he is well supplied with the means to guard him against a surprise in a sudden emergency.

The first of these instruments we shall describe under the name of the injecting or cannulated needle-porte. It consists of a cannula of the length and form of the porte already described, one line and a half in diameter; the calibre of small size, so as not to weaken the instrument by rendering it too thin in its walls; with a fissure or throat on the inner aspect of the short branch extending to the beginning of the curve which supports it, and communicating with its portion of the canal; and a sliding shield on the corresponding side and directly opposite to the extremity of the short branch. The opening into the cannula, at the handle extremity, must be square for the reception of the stiletto, which should also be square, and made to fit the opening just described, accurately but easily. It should be formed of steel, with a handle of convenient construction, to project fully an inch beyond the handle extremity of the cannula, and a chain in that part of it which is to traverse the curve and short branch, extending quite to its extremity. The whole instrument, with the exception of the stiletto, should be formed of silver of the hardest kind. The needles required for this porte differ very little from those already described: indeed, there will be a convenience in having them of the same form and size, as they may then be used indiscriminately and without the trouble of accidental transposing, as might sometimes take place when several descriptions are employed. With this porte the needles should be accurately fitted for reasons already expressed. (See *Plate, Fig. 4.*) This instrument was contrived and employed by us for the first time in 1830. In 1832 we had a second set constructed by Mr. Schiveiy of Philadelphia. We make these statements to show, that although our instrument resembles in principle the ingenious contrivance of Dr. A. E. Hosack of New York, its invention preceded, at least, three years the publication of his memoir, in which his instrument is figured and described, and that we are indebted to no precedent for its invention.

The directions for the arming of the porte will be anticipated by a reference to the instrument itself, and will not be more particularly given in this place, as well as those to govern and direct the introduc-

tion of it into the fissure, as they too, have been anticipated in what we have remarked relative to the first porte described by us. The extremity of the short branch, armed with its concealed needle, is to be placed in contact with the appropriate portion of the lip of either side of the nasal surface of the cleft; the ring of the shield, previously retracted, is now to be depressed and made to embrace the opposite surface of the lip with some degree of firmness. Thus confined and fixed, the intervening portion of the lip of the fissure must be transfixed, by forcing the extremity of the retracted stiletto against the opposing or obtuse end of the needle. This procedure, from the convenience of the instrument, can be accomplished with very great facility, and after some little familiarity with it, will only require to be used with one hand; the projecting needle may be drawn through with its associate compound ligature, as already advised. Reversing the movements, will enable the surgeon to disengage the needle-porte, and to withdraw it from the mouth. By repeated reapplications of this instrument, properly armed, sutures may be introduced in succession, in sufficient number to approximate the lips of the cleft completely, as well as to confine them in apposition.

The advantages of this porte are obvious and decided. Besides enabling the surgeon to execute the passage of the ligatures with precision in the more fixed portions of the lips of the cleft, it will be found especially convenient when the parts are vacillating and pendulous. It will be particularly adapted to applying ligatures to the velum and flaccid uvula, as well as to an operation which will be described in the sequel. By compressing the parts between the opposing powers of the short branch and ring of the shield, and at the same instant transfixing them by a sudden injecting application of the stiletto to the needle, less pain is experienced, and the operation executed almost instantaneously.

The second needle-porte which we have constructed was also contrived in 1830; and although originally for a very different operation, will be found well adapted to certain conditions of the operation of staphyloraphy. It is denominated the ginglymoid, or moveable angular needle-porte, and is exhibited in the plate, *fig. 5*.

This instrument differs little in the principles of its action as a needle-porte from the first which has been described in this paper. It is chiefly for its varying forms that we regard it as useful in the gummennath operations, and this property adapts it almost exclusively to the partial divisions of the velum from accidents; or imperfect reunion of the lips after an operation, when only a small portion of the fissure remains ununited. In either of such cases the sutures could not be

applied with the portes already described, because it would not be possible to pass their porte extremities through such small clefts into the nasal cavity, at which surface of the lips the sutures should always be inserted. The instrument we are now considering, from its delicate and slender form, can with ease be rendered applicable to all such cases.

The arming of the angular needle-porte consists in adapting the needle, previously armed with a compound ligature, to the mother screw in the extremity of the short branch, (which should be screwed up from its fossa in the long branch sufficiently to render it accessible,) by one or two turns, merely to enable it to take hold. The needle being well adjusted, may, with the supporting short branch, be screwed back into the groove of the shaft, until its point is carried below the margin of the groove. In this condition the porte extremity of the needle-porte must be made to enter the fissure, and to pass on into the nasal cavity until the point of the concealed needle may be supposed to have cleared the nasal surface of the lip of the fissure. Observing carefully the position of the needle, and taking care at the same time that it is on one of the sides of the fissure, it must be screwed out from the groove until the point has been carried at least one line and a half or more over the corresponding lip of the cleft. The instrument may now be retracted, which movement almost instantly urges the point of the needle through the textures with the supporting short branch of the porte. These manipulations are supposed to be executed with the right hand chiefly, and with such assistance as may be necessary from the left. As soon as the point of the needle appears distinctly on the faucial side, the handle of the porte must be passed into the left hand and held by it. The surgeon now, either with the forceps or a brass or silver rod, with an eye formed in the extremity to receive and accurately fitted to the needle, may by a turn or two unscrew and draw it downwards into the mouth, with the compound ligature connected with it. The short branch of the porte must now be disengaged from the lip by reversing the movements, and, as soon as released from the textures, may be depressed into its hiding place in the shaft of the instrument, and the porte retracted from the fissure and mouth. By repeating these several steps and manipulations, as many ligatures as are requisite may be inserted into the opposite side of the lip of the cleft.

This instrument, though somewhat complex in its construction, is easily employed, and with far less inconvenience than would be imagined. In some of the cases to which it is adapted, no other contrivance known to surgeons could be employed at all.

By fitting the needle accurately to the socket, the screws might be dispensed with, which would in some degree facilitate the passage of the needle and ligature. But unless made to fit very accurately, the needle might be displaced from the socket in passing the porte through a narrow cleft; when formed without the screw, the eyes should be placed near the blunt extremity of the needle, and the socket cleft on the inner face of the porte, as already described.

The operations described in the preceding pages, as already remarked, are designed for the correction of the more simple forms of cleft palate, situated either in the uvula, or the uvula and the velum at the same time. They may also be rendered efficient in some of the examples in which the fissure involves the bony palate, or even the palatine processes of the superior maxillaries, when it exists as a fissure only, and without any material deficiency of substance. But when there is a separation of the margins to an extent which will not allow them to be approximated, besides the fissure, these methods alone will not be found sufficient, and for the correction of the deformity, other expedients must be resorted to. We have met with cases of congenital divisions of the palate in which the margins were separated to so great a distance as to defy every effort to approximate them, aided by the means generally employed; and to remedy them we were compelled to draw upon our inventive resources.

The first operation contrived by us in a case of this description, consisted of a series of incisions more or less extensive, formed exterior to the margins of the cleft, and parallel with them, extending from the faucial to the nasal surface on both sides. These incisions being designed as granulating surfaces, were not allowed to reunite by the first intention, but kept apart by interposing between them small portions of buckskin or soft sponge, there to remain until suppuration should be well established, and then to be removed. Incising from the supporting portions of the lips of the cleft a belt more or less wide, and supported at each extremity by the natural continuity of the textures through which they may be nourished by blood, enables us to create an extensive surface for the eliciting and rearing of granulations without the least hazard or danger of disorganizing the parts separated, or their respective lips. In this condition they take on inflammation, which speedily terminates in suppuration; and granulations soon sprouting out from these newly created surfaces, fill up the incisions by which they are separated, and thus widen the lips to a greater or less extent. The first incisions are to be the most extensive; and as the lips are expanded, they should be less so, or

the cicatrices may ulcerate or become disorganized and slough. The newly formed parts cannot be safely incised until perfectly organized. It would be most safe to form the succeeding sections exterior to the cicatrices and in the original textures, as they granulate most readily and freely, and are not liable to ulcerate or slough. Should the parts be deficient in length, the method which we have been describing may be employed in a transverse direction, guided by the views just submitted, but not to divide the tensor palati muscle. Should much inflammation supervene, the parts may be bathed with demulcent and emollient liquids, cool or warm, as may be found most grateful. These agencies may be repeated, after proper intervals of repose, as often as may be required to give to the lips the degree of expansion requisite for the easy approximation and contact of their margins; and as soon as this is accomplished, the operation already described for the correction of the infirmity may be resorted to.

Cures by this method must necessarily be tedious, and the time required for their accomplishment more or less protracted, as the cases are distinguished by fissures of greater or less extent, or lips thin or the reverse.

By this plan, we once succeeded in dilating the lips of an extensive fissure, so that when the patient left us, the opening remaining presented a small perforation only, barely a line in diameter, instead of a chasm, which, when the patient was placed under our care, readily received three fingers without being filled. In this case the voice was greatly improved, as well as the power of deglutition, and enough was accomplished by the operation to prove its utility in similar cases.

The tedious nature of this operation induced us, in another case in which we were consulted, to modify it in such a manner as to render the cure more expeditious; and, although more difficult of execution, as well as painful to patients, we feel confident that it is an important improvement.

The operation consists in making the sections of the lips of the cleft oblique instead of perpendicular, as in the preceding operation; and, as it were, to divide or split them, so as to separate the nasal from the faucial portions of the lips. This method unites the advantages of the flap and granulating process. To be enabled to execute it with the greatest facility, the surgeon must be provided with suitable instruments, particularly several scalpels, for dividing the lips, of the form already described; (only those now required must be more slender and delicate, and terminating in points somewhat obtuse, with the blades six lines long, two wide, and rendered perfectly keen in all their cutting parts;) also several delicate hooks, of different sizes,

and a pair of slender forceps, constructed with a spring to close the blades,—all of suitable lengths.

Thus provided with instruments, and having the patient arranged as we have described in the initiatory stage, the surgeon commences the operation by denuding the margins of the lips of the fissure, as already described. As soon as the bleeding ceases, an incision is to be commenced in one of the lips, a little exterior to its margin, and a few lines anterior to its uvular verge. The marginal incision on the faucial surface should commence nearly a line and a half or two lines from the margin of the lip. At this point, the knife is to be inserted, and directed in such a manner as to cut the lip obliquely from a line continued from the point of its insertion parallel with the margin of the lip to the angle, to another line passing in or near the base of it on its nasal surface, thus forming the section in the diagonal between these points of the faucial and nasal surfaces of the lips of the cleft. Before forming the section, it would be advisable to fix the lip as already directed, and then, by a continuous incision from the point of insertion upwards and forwards to the angle, to execute the cut. Employing the forceps, now, or one of the hooks, the surgeon may continue the operation, using those instruments to dilate the incision, as he now forms it, by cautious dissection in the direction of the angle, and in the diagonal line between the two surfaces, until it reaches the nasal surface, near the base of the lip. In the execution of this step, great care will be required to guard against cutting through the flaps too soon, and to form them as nearly of equal thickness as possible. It will always be found most convenient to dissect from the uvula upwards, as by that means, the blood, which otherwise might essentially perplex and embarrass that step, will, in some degree, be avoided. These incisions should always extend a few lines above the angle, and must never be carried nearer than two or three to the uvular margin of the lip of the cleft.

The section of the opposite lip may be accomplished, in the manner just described, as soon as the bleeding from that already accomplished ceases. For reasons already stated, cold water should be freely used for some time after the traumatic bleeding is repressed.

The ligatures must now be introduced, and with as little delay as possible, or the lips may become so tender as to render their application exceedingly painful; and, should much time be delayed, even dangerous. For this purpose, the cannulated needle-porte, armed as already directed, should be employed; indeed, no other instrument of which we have seen an account can supply its place, in consequence of the loose and vacillating condition of the lips. The sutures are in

these cases to be inserted a little interior to the margins of the labial cuts on their faucial surface, so as to permit a belt of the natural covering of each lip of the cleft to be interposed between the denuded margins and the incisions, and embraced by the noose of each of the sutures. The directions already given with respect to the most proper portion of the cleft at which to commence the introduction of the sutures are here reiterated, and under no circumstances will it be prudent to deviate from them, or to begin the insertion of the sutures of the lips elsewhere than at the angle of the cleft.

Although we have described this mode of operating for cleft-palate as if executed upon the lips of the fissure their whole length, it is not to be inferred that we advise the measure in every case. On the contrary, this will seldom be safe, especially when the fissure is very extensive. The sections may be formed as we have described them, the whole length of the lips of the cleft, but it will not be safe to attempt to insert ligatures, at the first operation, to more than a third or half of the margins thus incised. By attempting too much at once, the chances for relief may be lost by the supervention of disorganizing inflammation, and the ulceration or sloughing of the lips. Executing the operation at different times, and after proper intervals of rest, and proceeding from the angle towards the uvula, it may with safety and a very great probability of success be employed even in cases of most extensive vacuities of the palatine septum. Those portions of the lips to which ligatures are not applied will be subjected to the dilating agency of the granulating process, and from this cause, when subsequently to be approximated by the diagonal section, may more easily and certainly be brought into perfect contact. To enable the surgeon to give to this mode of operating all the chances of success available through its several steps, each of which sustains important relations in the series, it will be necessary that time be allowed, not only for their regular and proper execution, but for the subsidence of all previous inflammation, and the perfect consolidation of the parts before another operation can be attempted with safety. In a word, it will not be prudent or safe to repeat any of the steps of this operation very soon after the lips of the cleft have been extensively incised or sutures applied. After the margins of the denuded and incised lips have been approximated and firmly united at the median line of their contact, and sufficient time has been allowed for the subsidence of the several traumatic, irritative, and inflammatory movements, as well as for the consolidation of the union of the parts involved in the operation, the remainder of the cleft may be closed in the same manner, only extending the diagonal section now quite through the uvular margins, which, after they are

approximated in the line of the fissure by the suture, but not confined in close contact, may themselves have sutures applied on their posterior margins, merely to prevent the displacement of the cut edges, and to keep the surfaces in contact as far as they are opposed to or overlap each other. This operation will be required in the cases attended with great deficiency of substance, and will, if properly executed, restore the septum and continuity of these parts, and in a great measure prevent the shortening of the uvula and velum, so apt to result in such cases.

Should the uvula and velum, however, be well developed, and possess substance sufficient to allow of their easy approximation and contact by the sutures only, this portion of the fissure may be closed and secured by the operations already described for the cure of the more simple forms of the infirmity. This operation will be equally applicable when the fissure extends entirely through the palatine and alveolar processes of the superior maxillary bone, with or without a division of the lip, and when the margins of the cleft, as is usual in such cases, are permanently separated. But when the lip is involved, and the case complicated with hare-lip, staphyloraphy, as well as the operation for this last infirmity, will be demanded. In such a complication, the bony cleft must first be corrected, as the parts then will be more easy of access to the operator, and the operation more easily executed, while the division of the lip remains open: after the long cleft is closed, the operation for hare-lip may be performed at once, or after the cure of the fissure is perfected.

It will be perceived from the direction and form of the section adopted in the execution of the operation we have been describing, that the action of the sutures, in approximating the margins of the lips of the fissure, also serves to maintain the contact of the cut surfaces. By drawing the superior or nasal surface down upon the inferior or faucial, their union, as far as they are in contact, is essentially favoured; and where they are not in contact, the granulating process soon brings them together by filling the vacuity, and at the same time expands and widens the lips of the cleft—thus placing the parts in a more favourable condition for succeeding operations.

The operation we have been describing is far less painful than "*a priori*" might be imagined; and with properly constructed instruments, for executing the sections, can be performed with comparative ease to the surgeon, and entire safety to the patient. When the advantages secured by it to the patients are properly appreciated, the pain necessarily connected with its execution ceases to be an object of fear with them. Without some such rhinoplastic effort, as has been

described in the preceding reflections upon this form of the infirmity, it would not be possible to correct, even in an imperfect degree, its inconveniencies and disgusting deformities.

In the traumatic stage it will not generally be necessary to employ any other topical measures than merely to allay the nervous irritation of the parts soon after the operation, and to moderate the inflammation, should it seem disposed to assume a character of inordinate intensity, and for this purpose, the cold water (already advised) soon after or during the operation, with cool or tepid demulcent washes of elm tea, will be found fully sufficient. Generally, the copious effusions of mucous, and other secretions, which so abundantly bedews the fauces, mouth, and posterior nares, render topical applications unnecessary.

A form of traumatic irritation exceedingly apt to follow the operation for cleft palate, and subjecting individuals to excruciating suffering, is that distressing species of headache generally regarded as nervous. From this affection, as a traumatic result, all surgical patients suffer more or less; but in consequence of the near proximity of the nervous filaments, wounded in staphyloraphy, to the ordinary seats of neuralgic pain, it is more liable to follow the operation in violent degrees, than any other. It is indeed neuralgia, and in many instances, of the most intense and violent form.

With individuals of strongly marked nervous developements, it would always be proper, immediately before or after the operation, to administer a commanding nervine, or narcotic, as the one or the other may seem to be indicated, by a deficiency of mobility, or excess of sentient life of the nerves of sensation. By employing such means before distressing pain comes on, much additional suffering may be prevented.

Should a feverish state follow, it must be corrected by the early employment of cathartic enemata, and, should these fail to afford relief, the lancet must be resorted to. These remedies, aided by rigid abstinence from food of every kind, will generally arrest any fever which may follow; and they will also tend essentially to restrain the traumatic inflammation, and favour adhesion. The introduction of medicine into the stomach would endanger the co-aptation of the parts, and is inadmissible at this stage. Patients, to enable them to carry out the system of rigid abstinence from food, drinks, conversation, and whatever might tend to excite the organs of deglutition and speech, will be greatly aided by spending the three first days after the operation, closely confined in bed, in a dark, quiet room.

The condition of the sutures, as well as that of the margins, should

be carefully examined into daily, so as to enable the surgeon to apply the proper means for tightening the sutures at once, should such a step become necessary; or to relax them if they seem to be exerting an injurious force upon the inflamed lips of the cleft. Some nourishment may be allowed on the third day, and as semi-fluids are most easily swallowed, this form should be selected for the administration of food: rice gruel rendered thick by long boiling, generally answers best in such cases. Thick soup may also be used if the tendency to sink from the long inhibition of food, is considerable. Enemata of nutritious fluids may also be used if patients become enfeebled and faint before it would be safe to take nourishment by the mouth. To prevent, in some measure, the pains and sufferings from the necessary fasting in this operation, we have been in the habit of requiring our patients to partake freely of solid food a short time previous to the operation, and we believe by this expedient we have saved ourselves, as well as our patients, much trouble and inconvenience. When food can be allowed, it should only be taken in very moderate quantities at a time, and after long intervals.

As soon as the union between the lips has become firm the sutures may be cut away; generally on the sixth or seventh day, the first nearest the angle may be removed; and on alternate days, as shall be found safe, the remainder may be removed. This may be effected without pain, and with great facility, by simply cutting one of the branches of the wire a little below the twist, and drawing it away with the forceps already embracing the end of the twist.

EXPLANATION OF THE PLATE. *Figure 1.*—Forceps for confining the lips of the cleft for denudation. A, Spring for closing the blades. B, Rivet. C, Perforations to enable them to retain their hold more accurately. The forceps for drawing and twisting the wires should be straight, with a similar spring, wider blades, and without perforations.

Fig. 2.—A delicate two edged scalpel for dividing the margins of the lips of the cleft, and for making sections of the lips either perpendicular or oblique.

Fig. 3.—Needle-porte of the most simple construction. D, The recurved or short branch with the socket E for receiving the needle F with two eyes, and the fissure or throat to admit the two extremities of its ligature when armed.

Fig. 4.—Cannulated or injected needle-porte. G, Cannula; H, short or recurved branch; I, its canal; J, the throat; K, ring of the stiletto; L, stiletto perfectly square; MM, rings or handles of the long branch; N, sliding handle of the shield, confined by the square canal O; P, handle; Q, elliptical ring; R, needle for the canal of the short branch with two eyes; S, stiletto with its chain-like appendage T.

Fig. 5.—Ginglymoid or moveable angular needle-porte. V, handle; U, thumb-screw; W, shank; X, sliding lever; Y, needle porte; Z, needle with one eye.

Fig. 6.—Represents the shank sliding lever; and the porte elevated from the

fossa in the shank, by the action of the screw impelled by the thumb-screw at the handle extremity.

Fig. 7.—Eyed-rod for unscrewing the needle from the porte.

Fig. 8.—Bifid palate occupying the uvula, velum, and palatine bones, with a deficiency of substance which will not permit the margins to be approximated and brought into contact.

Fig. 9.—The cleft treated by perpendicular incisions, and tents, for the purpose of widening the lips through the dilating agency of the granulating process. This figure represents the wires of the incisions with the extension of the lips effected, as indicated by the dotted lines.

Fig. 10.—The same description treated through the rhinoplastic agency of the oblique incisions and leaden sutures. *a a*, Represents the union of the margins at the median line; *b b b b*, the boundary of the faucial sections; *c c c c*, the spaces intervening between the margins and the faucial incisions, with their natural tegumentary coverings; *d d d d*, &c. the leaden ligatures twisted at their presenting extremities; *e e e e*, the surface of the incised portions of the lips rendered visible after the margins are drawn into contact by twisting the extremities of the wires upon the nasal portions of them, but on their faucial aspects, and is the exact measure of the advantage gained in widening the lips by this mode of operating.

ART. IV. *A new Treatment in a Case of Anchylosis.* By J. RHEA BARTON, M. D.

In the North American Medical and Surgical Journal for April, 1827, I published an account of a new and successful operation at the hip, which had been undertaken for the twofold purpose of remedying a most serious deformity and lameness, and of *establishing an artificial joint*, as a substitute for the natural articulation, which had become obliterated by disease, terminating in true anchylosis.

The principles upon which this operation was founded, as well as the circumstances justifying the performance of it, were fully detailed in the publication at that time.

In prosecuting my views for remedying lameness and deformity from the mal-position of limbs in cases of true anchylosis, I have been enabled to present another case successfully treated, under circumstances suggesting a practice of a peculiar character.

In the case of anchylosis at the hip joint, it is to be recollected that the neck of the femur was sawn through, and the distorted limb straightened. The wound of the soft parts was then healed, whilst the reunion of the divided bone was prevented by subjecting it, from time to time, to motion; such as gentle rotation, flexion, and extension, abduction and adduction. After continuing this treatment for a

few weeks, the ends of the bone lost their disposition to unite, became obtunded and smooth, and were held attached to each other by provisional bands or ligaments, and in this manner forming an artificial joint; whose movements were regulated by all the principal muscles by which the original joint had been controlled. Thus fulfilling the ends of my operation, and rewarding my patient for his fortitude.*

In the case now to be described, no attempt was made to establish an artificial joint; as the attending circumstances did not admit of such a consideration. The object of my treatment was to remove deformity, and to restore to usefulness a limb which had unfortunately been suffered to become ankylosed in a mal-position. The following will, I trust, satisfactorily explain the operation and the after treatment of the case, as well as the principles by which I was guided in the management of it.

S—— D——'s, M. D., formerly of Charleston, S. C., but now a resident of Alabama, when a youth of about nine years of age, unluckily had his knee joint involved in inflammation and suppuration so extensively, as to occasion the destruction of the synovial membranes, the ligaments, cartilages, and, in short, every structure peculiarly appertaining to the joint. After a protracted suffering he finally recovered with the loss of the joint; the tibia, femur, and patella having become united to each other in the form of a true anchy-

* The patient, upon whom this operation was performed, enjoyed the use of his artificial joint for six years; during which period he pursued a business (trunk-making) with great industry, earning for himself a comfortable subsistence, and a small annual surplus. Pecuniary losses, however, through the reverses of those in whose hands he had confided his means, sunk him into a state of despondency and desperation, followed by habits of intemperance. This, with all its train of evils, abuse of health, &c. was, no doubt, the cause of the change which afterwards took place in the artificial joint. It gradually became more and more rigid, and finally, all motion ceased in the part. With this exception, the benefits of my operation were retained and fully appreciated until the period of his death; for as the limb had been freed from deformity and restored to a useful position, he had no occasion even for a cane to aid in walking. During an attack of the Asiatic cholera, he expressed a desire that I should be sent for, in order that he might renew his bequest to me of the parts interested in the operation. He recovered from the cholera, but subsequently died of phthisis pulmonalis. The autopsy exhibited the parts as described in the published case, but with the artificial joint ankylosed; a change which had been effected within the two years previous to his death. With ordinary care, in all probability, this would not have taken place.

The final history of this case presents now the important fact, that benefit had resulted, which fully requited the individual for the pains he had endured, and were considered by him, even after the closure of the joint, yet an ample reward for the operation he had undergone.

losis. The loss of the articulation of the knee, however, though a misfortune, did not constitute the *sadness* of his case. It was caused by the mal-position of the limb; the leg having been flexed upon the thigh to a degree somewhat less than a right angle. Hence the only alternatives of which he could avail himself to aid him in walking were, either to use crutches, or to employ a very high block-sole boot, and to lower his stature by flexing the sound limb, in order that both feet might reach the ground. The latter expedient he adopted. The long continued pressure and weight of the body sustained by this defective limb, acting under such great mechanical disadvantages, had at length caused some projection of the instep, and other irregularities, which it is unnecessary to particularize.

This supposed irremediable condition of his limb, with all its ills, the young gentleman endured during the period of about sixteen years. In the mean time he graduated in medicine, and became a successful and highly respectable practitioner; but as his professional labours increased, he found the condition of his limb to be an obstacle not only to his further success, but also a source of unceasing annoyance and vexation. Whereupon, with a resoluteness not surprising to those who knew the strength of his mind, the firmness of his character, and the abundance of his manly courage, he repaired to Philadelphia in order that some relief might be obtained, if it were possible. When consulted by him I found him fully prepared to learn that no benefit was to be expected from any heretofore known practice, and that if he could be relieved it must be by some novel expedient and treatment.

After a candid and full disclosure of my views of his case, and of the means by which I thought he might be benefitted, his own judgment accorded with mine; and believing in the feasibility of the plans, he became urgent for the undertaking. It was accordingly commenced on the 27th day of May, 1835, and pursued as follows:

Two incisions were made over the femur, just above the patella. The first commenced at a point opposite the upper and anterior margin of the external condyle of the femur, and, passing obliquely across the front of the thigh, terminated on the inner side. The second incision commenced also on the outer side, about two and a half inches above the first; and passing likewise obliquely across the thigh, terminated with the other in an acute angle. By these incisions were divided the integuments, the tendon of the extensor muscles of the leg, at its insertion into the upper part of the patella, and some of the contiguous fibres of the rectus and crureus muscles themselves, a greater part of the vastus internus, and a portion of the vastus exter-

nus muscles. A flap, composed therefore of this structure, was elevated from the femur close to the condyles. The soft parts were next detached from the outer side of the bone, from the base of the flap toward the ham, by passing a knife over the circumference of it, so as to admit of the use of a saw. The flap then being turned aside a triangular or wedge-like piece of the femur was easily removed by means of a small narrow bladed saw; such as was used in the operation at the hip. This wedge of bone did not include the entire diameter of the femur at the point of section; so that a few lines of the posterior portion of the shaft of the bone remained yet undivided. By slightly inclining the leg backward, these yielded, and the solution was complete. This mode of effecting the lesion of the bone was designedly adopted, and constituted what I conceived to be a very important measure in the operation. Important, because it rendered the popliteal artery free from the danger of being wounded by the action of the saw, and subsequently the interlocking of the fractured surfaces tended to retain the extremities of the divided bone in their positions until the harshness of their surfaces had been overcome either by the absorption of their angles, or by the deposition of new matter upon them—a change essential to the safety of the artery during the subsequent treatment of the case. Not a blood-vessel was opened which required either a ligature or compression. The operation, which lasted about five minutes, being thus ended, the reflected flap was restored to its place, the wound lightly dressed, and the patient was put to bed, lying on his back, with the limb supported upon a splint of *an angle corresponding to that of the knee previous to the operation*. This position was maintained until it was believed that the asperities of the bone had become blunted, and were not likely by their pressure to cause ulceration of the artery beneath them. This first splint was then removed, and another having the angle slightly obtuse was substituted. In a few days a third splint, with the angle more obtuse than that of the second, supplied its place. Others, varying in degrees of angularity, in like manner came in their turn to support the limb until it had attained a position almost straight. It was then unchangeably continued in that line until the contact surfaces of the bone had united and securely fixed the limb in this the desired direction.

During the treatment of the case, especial care was bestowed in protecting the popliteal vessels against any injurious encroachment upon them. With that view, all antagonizing pressure on the soft parts in the ham was carefully avoided. The limb was rested on two long bran bags, laid upon the splint, with their ends apart—a vacancy

of four or five inches being left between them opposite the lesion of the bone. This interspace was lightly filled with carded cotton, so as to afford a safe support. Every symptom of pain or uneasiness in this part was promptly attended to. The occasional issue of a drop or two of blood from the corner of the sore, during the process of dressing the limb, caused me some solicitude in this case; whereas, ordinarily I should have considered it as a matter of no moment—it being so frequent an occurrence during the dressing of wounds, owing to the disturbance of the granulations, especially in compound fractures. The wounded soft parts finally healed and quieted his anxiety. The straightening of the limb having been very cautiously and by degrees effected, the first two months elapsed during the accomplishment of this object. Having then reduced it to the desired position, means were carefully observed to retain it so until the reunion of the bone had been fully completed; which occupied two months longer. The constitutional symptoms were such as usually occur in compound fractures—somewhat severe, but at no time alarming. Throughout the whole treatment it was not found necessary to bleed him, or to have recourse to any very active constitutional measures. He was occasionally indisposed from irregularity in the digestive functions, but was always speedily relieved by resorting to mild and appropriate remedies.

At the end of about four months from the date of the operation my patient stood erect, with both feet in their natural position, and the heels resting alike upon the floor, although a slight angle had been designedly left at the knee, in order that there might not be any necessity for throwing the limb out from the body in the act of walking, which is always the case when the knee is quite straight. After this period, the use of shoes of the ordinary shape was resumed, and the limb was daily exercised with increasing strength and usefulness. On the 19th of October, the Doctor took his departure for the South, bearing with him the injunction to continue the support of a small splint and the aid of a crutch or cane, until he should acquire sufficient confidence in the strength of the limb to justify him in laying them aside.

I was subsequently advised of his improvement; but was resolved not to give publicity to the case until the full and entire benefit of the operation could be ascertained. The wide distance which afterwards separated us prevented me from obtaining the necessary and direct information until within a recent period. I have the pleasure now not only to afford this intelligence, but to present it in the most satisfactory manner. Having written to the doctor for the informa-

tion, and to learn from him in what manner it might be agreeable that I should refer to him as the subject of the case, the following clear, satisfactory, and well-written answer was promptly received. As the letter is full of interest in the case, I must be excused if I publish it almost entire, even though it contain some flattering sentiments for the one to whom it is addressed. That part only has been omitted which is in courtesy to my family.

Charleston, November 6th, 1837.

“My dear sir,—Your letter of the 8th October, directed to me at *Mobile*, has just reached me at this place, where I am on a visit to my parents. I received a letter from you last winter, some months after its date, and availed myself of the opportunity of a friend going to Philadelphia, and who promised me that he would see you, to send you a full communication of my situation then. I preferred this to writing by mail, as he had been with me, and could answer any particular inquiries you might make. On his return he mentioned that he had arrived in Philadelphia only a few days after you had sailed for Europe. Your letter of the 8th is the first information I have had of your return. I have the satisfaction and pleasure of saying to you now, that the operation you performed on my leg has been *completely* successful, and has more than realized my most sanguine anticipations. The small abscess, which you dressed the day before we parted at Norfolk, continued open, and threw out, from time to time, small pieces of bone, until the August after, when the last piece was discharged; the orifice then closed, and I have suffered no material inconvenience from it since. From the January previous, however, I was going about and attending to my professional business; and early in the summer, when our sickly season commenced, I was on horse-back daily, riding from thirty to fifty miles a day; without more than the ordinary fatigue or inconvenience. I am at present well: the wound sound; and I feel no other inconvenience in riding or walking, than what arises from my knee joint being stiff, which was the case before you performed the operation. I walk without a stick or other aid, with the sole of the foot to the ground, and my friends tell me, with but a slight limp; and I have great pleasure in adding that the leg and foot have increased considerably in size, so as now to be nearly equal to the other. When I think of what I was, and what I am; and that to your firmness, judgment, and skill, I am indebted for the happy change, I want words to express adequately all that I feel. I will not attempt it, but believe me, my dear sir, I feel it not the less.

I shall remain here a week or two longer, and if you wish any further information on my case, do write me, and I will give it most cheerfully. After that period I cannot say where a letter would reach me.

Adieu * * * * *

and am, my dear sir, very sincerely, your friend,

SEAMAN DEAS.

To Dr. J. Rhea Barton.

P. S. In the statement you propose publishing of my case, I am quite willing you should refer to me in the manner you suggest, using my initials in the body, and my name at length in the note you propose appending to it."

Remarks.—In the case just recited, several difficulties of a peculiarly embarrassing nature presented themselves, as obstacles to the restoration of this disabled limb; namely, the true character of the ankylosis, the extreme angle at which the joint was fixed, the changes of structure which must have taken place during the past sixteen years, and the probable condition of the flexor muscles of the leg. As these had not been called into action since boyhood, it was questionable whether nature had contributed to their growth in proportion to the developement of the other parts of the body; or if she had, whether their contracted and inactive state for so long a time had not rendered them functionless and unyielding. It was not improbable, also, that the blood-vessels had acquired adhesions and an organic angular form at the bend of the knee. The operation was devised, and the treatment pursued, with due regard to all these circumstances.

It must be apparent that, if the tibia and femur could have been disengaged from each other at the point where the original joint had existed, this should have been the selected spot; but it was forbidden by the bulk of the condyles, the adhesion of the patella, by the extent to which the incisions would have been required, and by the disadvantageous position of the popliteal artery, as it lies embedded in the recess between the condyles of the femur.

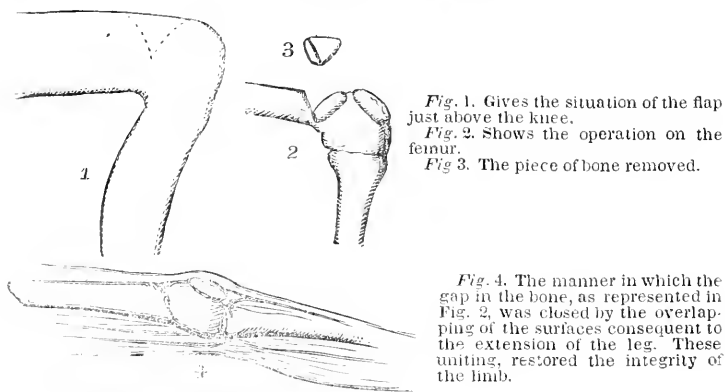
The most eligible spot for the section of the bone is that available point which is nearest the original joint, and is at the same time free from these objections. Hence the choice which was made.

The flap elevated from the bone was composed of parts which, in a natural state of the knee-joint, it would have been improper to

have divided; but as the articulation had been annihilated, the *functional* importance of the parts appertaining to it had ceased; consequently no material disadvantage was to be apprehended from a division of them. The *shape* and *direction* of the flap were believed to be those best suited to the necessary and convenient exposure of that portion of the bone which was to be excised, and with the least possible injury to the adjacent parts. The profile of the piece of bone which was removed formed a tolerably accurate equilateral triangle. Its shape was of importance to the success of the case; and the angle at which the section should be made became a matter of calculation. If it had been cut at too acute a degree the new surfaces would have reached each other before the limb had been sufficiently extended; if at too obtuse an angle, the leg would have borne full extension without entirely closing the gap. The reunion, consequently, might have been prevented. If a single transverse section of the bone had been made, instead of the above, there would have been a necessity for great elongation of the flexor muscles of the leg and yielding of the other soft parts behind the knee, and if accomplished, there would have been left between the divided surfaces of the bone a large triangular gap or chasm, which would most probably have occasioned a false or artificial joint, without the requisite muscles to control its movements. By the excision of the wedge-like or triangular piece in front, the axis upon which the bone turned was brought so near to the muscles, or their agents, the tendons in the ham, that a slight deviation from their direction only was required, instead of an elongation of their fibres. In proportion, also, as the limb was extended, the chasm in the bone, occasioned by the removal of the piece, became diminished; and upon the restoration of the limb to the nearly straight line, the gap was closed by the approximation to contact of the sawn faces of the bone, in a manner resembling the corresponding surfaces of an oblique fracture, when accurately adjusted.

It is not the least interesting circumstance connected with the history of this case, that the subject of it was an enlightened physician—one capable of appreciating our profession as a science—and for the undeniable proof which he has afforded of his confidence in it, he fully merits our thanks, as well as all the special benefit which he has derived from the operation.

The accompanying wood-cut will serve to illustrate the above account.



Philadelphia, December, 1837.

ART. V. *Case of Labour; Convulsions; Instrumental Delivery; Recovery.* By WILLIAM DENNY, M. D., of Ellicott's Mills.

In a communication, inserted in the number of this Journal for February, 1836, on puerperal convulsions, I have stated that I had seen enough of pure artificial delivery, to deter me from its repetition, as a means of arresting the disease.

Having recently been concerned in the treatment of a case of labour, in which a convulsion had supervened, and resort was had to instruments, with favourable result, I beg leave to forward a brief detail of the circumstances under which their use was adopted.

I was invited to join my neighbour, Dr. A——, at 3 o'clock, A. M., June 11th, 1837, in consultation. The patient, Mrs. J—— was young, of delicate appearance, and in her first accouchement. About the middle of the preceding week she had fallen backwards down hill, but without complaint of much injury. During the few days between this accident and the commencement of labour, œdema was stated to have occurred throughout the cellular tissue. No particular symptom was recollected, however, which could be classed as premonitory of the complication, which presented itself.

On Saturday the 10th, at noon, the membranes ruptured and the liquor amnii was discharged with but little precedent pain. In about fourteen hours, the os uteri having dilated, no rigidity of the

vaginal passage existing, the head of the fœtus presenting favourably, and having advanced considerably through the pelvis, the capacity of which, and the area of its outlet, not forbidding, and the pains having almost entirely subsided, Dr. A. administered a decoction of a scruple of *secale cornutum*, and repeated the dose in twenty minutes. The uterus took on powerful contractions, and the case gave promise of speedy and happy termination.

Without the manifestation of any thing which denoted convulsion, unless a somnolency, somewhat unusual, from which, however, she was easily aroused by any impression, especially by the recurrence of pains, might be considered to do so, she was suddenly agitated by violent epileptiform convulsive movements. Her pulse was found to be now oppressed and contracted; venesection was performed, under which the pulse rose, and the depletion was continued to about $\frac{3}{4}$ xlviij., when the excitement of the circulation became subdued.

Any coma, which may have succeeded the fit, had passed off at my visit. There was great restlessness; the face was pale; the pupils dilated; the circulation, as expressed by the stroke of the heart and the radial pulse, was reduced, but not sunk. Some tendency to drowsiness continued, but her attention was arrested without difficulty, on speaking to her, and her intelligence appeared perfect. She complained of *constant* pain in the lower part of the back and hypogastrium, and although she now and then made muscular movements, such as frequently accompany the recurrence of pains of labour, the touch recognised no parturient effort.

The head was low in the pelvis, its vertex to the pubic arch, the face in the hollow of the sacrum, the scalp much swollen, and its most projecting point was nearly on a line with the verge of the labia majora.

After waiting some hours, we gave her $\frac{3}{4}$ ij. of ergot, out of the same specimen used before, in $\frac{3}{4}$ j. doses, every twenty minutes, without the slightest appreciable impression.

By 4, P. M., the bladder filled, and a cautious but persevering attempt was made to empty it with the catheter. That instrument could not gain admission, even with the aid of simultaneous repulsion of the head, which gave no more room, as it had made its turn, from the original presentation, between the right acetabulum and the left sacro-iliac synchondrosis.

An active purgative enema was ordered to be thrown into the rectum, which was returned immediately on being administered, from the occupancy of the pelvis by the presenting part of the fœtus.

Delivery by instruments seemed to be our only alternative, for the condition of the bladder was critical, and as the pulse now began to

flag, the system must succumb unless the birth could be speedily completed. We had given time for spontaneous efforts: ergot had been used to a full extent, and had failed to re-excite them: and that artificial delivery might cause return of convulsion or aggravate collapse, was a problematical danger, while that which impended seemed inevitable.

Shall we resort to the forceps and lever on the one hand, or to the perforator on the other? The former will be dangerous to the bladder, and the absence of pulsation at the fontanelles, but more especially the sensation of disruption communicated to the fingers by the bones of the cranium, seem to indicate that the fœtus has perished. Embryulcia is easier to the operator, and more safe, and not likely to be painful to the mother.

I accordingly perforated the cranium, broke down the cerebral mass, gained a point d'appui for fingers, blunt hook, or crotchet, and the only evidence of uneasiness expressed by the female, was when the os externum was at its utmost stretch.

I perceived no expiring struggle about the fœtus; the umbilical cord was flaccid and pulseless; and numerous ecchymoses on the trunk satisfied us that we had only mutilated a dead infant.

The womb contracted, as is usual, upon the delivery, and after a half hour of friction and kneading of the abdomen, my colleague, with gentleness, and without causing suffering, succeeded in removing the placenta entire. Its fœtal surface was smeared with meconium, and the tonic contraction of the womb took place so immediately and completely, that not more than $\frac{5}{16}$ of blood were lost.

The powers of the circulation sank somewhat, however, and great disposition to sleep followed, from which she started ever and anon, with some expressions indicative of transitory delirium. But the respiration was full, slow, and expansive. As soon as we considered all danger of hemorrhage to be passed, we gave her nutriment and stimuli, with caution. The stroke of the heart and pulse rallied, and, at bed-time, it was deemed unnecessary to administer an anodyne, as she was sleeping soundly.

I discontinued my attendance in a day or two afterwards, at which time she was doing "as well as could be expected," and, at the date of this paper, she has recovered, with the exception of some incontinence of urine, nothing having occurred, as I understand, during the getting up, traceable to the convulsion or the treatment pursued.*

* A part of this passage is, perhaps, expressed too strongly; as the loss of command over micturition, when regarded as a sequence of the constant pain complained of in opposite points of the pelvic circle, evincing some degree of impaction, may present our delay of appeal to instruments as too long protracted. The impair-

No practitioner, who has had to manage a case of puerperal convulsions will consider supererogatory any attempt to make clear the choice of remedies, or to discriminate the circumstances to which they ought to be applied. I do not profess to enlighten the one or point out the other, my object now, as in my former paper, being to elicit information from those whose names and attainments give them weight with the profession, which may lead to more exactness in the theory, as well as treatment of this formidable disease.

With regard to artificial delivery as one of our remedies, I quote the following, viz:—

“La Motte, Osborne, Leake, Hamilton, Dubois, Ashwell, Nauche, Miguel, Burns, Oslanders, father and son, Dugès, and Ramsbotham, are favourable to as early delivery as possible, without violence; whilst Bland, Garthshore, Baudelocque, Hull, Gardien, Denman, and Blundell, are *against forcible dilatation of the os uteri* and attempts at delivery *in the early stage of labour*. After all, the difference is more in words than in intention; for the general object is to hasten delivery without injurious interference.” (Copland’s Dictionary.)

I hardly think Denman is fairly represented in this quotation; for he says, “if we reflect upon the greater number of cases of women who have been delivered under these” (he is speaking of the undilated state of the os uteri) “and *far more favourable circumstances*, the greater part of whom have soon died, their death being apparently hastened by the operation, however carefully it may have been performed, we shall be deterred from then” (i. e. in the beginning of labour) “proposing it,” &c. He then, in a note, refers to an opinion *merely practical*, of Dr. Ross of St. George’s Hospital, who doubted the propriety of speedy delivery in *all* cases of puerperal convulsions; “the event of many cases has since confirmed the justice of his observation, both with respect to mothers and children.” (Denman.)

Professor Dewees is in favour of turning, immediately after bleeding, where the os tincæ is dilated or dilatable, and of the use of the forceps when the attack has come on at a more advanced stage of the labour, and when the head has escaped entirely out of the mouth of

ment spoken of was the effect of bruising the neck of the bladder, by the unchanging presence of the head, and not from rupture of that viscus or laceration inflicted by the instruments employed. Such was the advancement of the head, and so patulous the os externum, that neither perforator, blunt hook, nor crotchet came at all into contact with the soft parts of the mother. There occurred no sloughing of the parts damaged, though some suppuration followed. Moreover, I have this day seen the patient, and she states that she has recovered entirely of the stolidium, without the use of any remedy. August 10th, 1837.

the uterus. (System of Midwifery, 4th ed. p. 235. By W. P. Dewees, M. D.)

It would appear, from all the authorities within my reach, unless Denman be excepted, that the course they advise to be pursued implies a wish that delivery should be completed without any definite idea of the *modus operandi* of such an event in the control of the affection.

Now, when we reflect that convulsion occurs sometimes before labour sets in, sometimes during that process, and sometimes after the delivery, we shall perhaps give less importance to the suppositional overstretching of the uterine nerves in the causation of the disease than seems to be in the minds of some of those who are anxious to stop short the convulsion, by placing the womb in a quiescent state, by artificial delivery; and although spontaneous efforts, coming on after convulsions have ceased, may afford a favourable prognosis, yet the recurrence of labour-pains may be among the *effects* of the beneficial agency which has removed the complication, and not a *cause* of amendment.

The grounds of the treatment adopted in the above detailed case were as follows:

However conflicting may be opinions on the minute ætiology of the disease, that variety of epileptic puerperal convulsions which may be called entonic, is admitted by all to be marked by determination of blood to the brain. The entonic character consists, in part at least, of vascular excitement, perhaps based upon or superadded to a plethoric condition of the system. If, in all cases of pregnancy or labour, more or less compression is made upon the descending current of the circulation,† this must vary greatly according to circumstances; and cannot be “pretty uniform in every pregnancy,” as remarked by Dr. Dewees. In a plethoric state, and under vascular excitement, a certain amount of obstruction must exist in the descending current, and regurgitation to the superior parts of the body, and to the head in particular, must be the consequence, or in other words, determination to the brain must be established.

Amidst these circumstances convulsion occurs; and among the disturbances of function which follow may be suspension of the labour at any stage of its progress.

Depletion is practiced to such a reduction of the vascular fulness, and such a control of the excitement, as are necessary to correct the determination to the brain, and *no more*; if I have contended aright in my former communication, and if the following language upon

* Baudelocque, referred to in Dewees's Essay, Am. Med. Rec. vol. i. p. 312.

another subject can be applied to that under consideration, "To take an ounce" (of blood) "more than the subdual" (of the affection) "requires, is injurious—to take an ounce less is still more pernicious—to take the quantity necessary to the object, and no more, is to use the lancet—that powerful instrument, so dangerous in rash hands, and no less dangerous in weak—with the discernment and decision of a master."*

We subdue the excitement, the pelvic obstacle remaining. Now, to resort immediately to artificial delivery, will be to remove the compression on the descending current of the circulation, and the effects will be analogous to those of ultra depletion, among which may occur syncope, convulsion, or the coma of collapse. These consequences have sometimes ensued from a too sudden and speedy delivery by natural efforts. (Denman.) They will not be less likely to follow that which is effected by means which are artificial.

In the case before us, this happy medium of depletion had been observed by my able colleague. We then suffered the system to accommodate itself to the loss of blood, before we prescribed *secale cornutum*, and as that agent failed to recall uterine contraction, we resorted to instrumental aid, not to prevent convulsion, (for as that had not continued to recur, and from the time which had elapsed, viz. fifteen hours, and the state of the pulse, was not likely to do so, we looked upon that complication of the case to be subdued,) but for certain local and general phenomena which presented themselves arising from the protraction of the labour, with but a remote dependence on, or reference to the convulsion.

Ellicott's Mills, July 3, 1837.

ART. VI. *Report of a Trial for Murder, by the Administration of Oil of Savine, for the purpose of procuring Abortion.* By CHARLES A. LEE, M. D., New York.

This trial came on before the Supreme Court of Massachusetts at the September term, 1835; holden at Lenox, Chief Justice Stow presiding, assisted by S. Putnam and S. L. Wilde, Esqrs., Puisne Judges. The chief count in the indictment charged John Eldridge, a substan-

* Southwood Smith on Fever.

If the sentence quoted be applicable to inflammation of the brain and its envelops, a fortiori, it may be considered just, where the state of the cerebral circulation is only that of a disturbed balance or even congestion.

tial farmer of Hancock, Berkshire county, with procuring, and causing to be administered to Lucy Livingston, an ounce of the oil of savine, for the purpose of producing abortion, but which resulted in her death. As there were some points of considerable interest connected with this important trial, which for many days powerfully excited the feelings and sympathies of a large and respectable assemblage, it is believed that a condensed report, will not prove unacceptable to the profession generally. The following report is an abstract from notes taken during my detention as a witness.

Testimony on behalf of the government.—Elijah Graves, M. D., was sworn. “Lives eight miles from the prisoner. About two months before the death of Mrs. Livingston, Mr. Eldridge applied to me for medicine for her; said he wanted something to restore the menstrual evacuations; I asked her age, and sent a dose of iron and rhubarb; a fortnight afterwards he came again and said the medicine had had no effect, and wanted something more powerful; no allusions were made to her being pregnant. On the 26th of June, Mr. E. visited me the third time, and said Mrs. L. requested me to see her, if I was in Hancock; which I did on the day following. I found her labouring under uterine hemorrhage; she told me she was pregnant; five or six months gone; I should have judged also from her appearance that such was the case. The hemorrhage was not alarming; but I thought there was danger of abortion, and told her so. From her house I went to Eldridge’s and dined there; intimated her situation to him; but did not converse much about it. The next time I saw Mrs. L. was on the Monday evening following, in Stephentown. I found her with considerable fever and pain, similar to labour pains; some uterine hemorrhage; but not very great. Symptoms indicated abortion; prescribed rest and some cathartic medicine. She came there on foot, a distance of four miles. On Tuesday, the next day, I visited her and found the fever abated; made an examination per vaginam; *discovered that there was a fœtus; have no doubt on this point.* I did not see her again till the Thursday following. The fœtus had then come away, and she had no appearance of pregnancy. The placenta remained in the uterus; I thought it not best to attempt to remove it. I asked her if the child was gone; she said it was. Several days afterwards I visited her at her own house, in Hancock; she had had a very poor turn; severe hemorrhage; part of placenta had come away; I continued to visit her daily down to the day before she died. On Friday I considered her very dangerously ill, and told her so; desired a consultation, and Dr. Tyler was sent for. He also considered her case alarming. She died on the Tuesday following.

Cross-examined.—At one of my visits saw a phial, containing about a teaspoonful of some liquid; was not acquainted with it; have used savine in substance, but not the oil. Oil of juniper is a powerful emenagogue, and considered by some a specific in procuring abortion. When the examination was made, I found the head of the child presenting; reached the placenta or a portion of it; *could not swear positively it was a fœtus; saw nothing of fœtus, umbilical cord, placenta, or membranes; feeling is an uncertain test,* though one of the best. *Mrs. L. got very well, a short time before she was taken sick, by walking a*

long distance through the grass; such exposure would be highly dangerous to one in her situation; she was threatened with abortion previously, and this was calculated to increase the danger. Abortion is not necessarily fatal; but often dangerous; have been in practice twenty years; have never known a death from this cause; think she would have recovered, had she followed my direction. Danger of abortion depends on the cause."

Miss Harriet Miller, sworn.—"Mrs. L.'s husband had been absent about a year. On the Friday morning before her death, Mrs. L. said, if she thought she could not live, she would send for some one and *tell the whole story*. Made no reply, when her sister told her, she could not live; at this time was in an ague fit; occasionally her mind wandered; asked her *if she was willing to be sworn*; was not disposed to say much about it. Saw no quicksilver, steel-dust, or southern-wood about the house."

Joseph Belcher, sworn.—"Am son of the accused by her first husband. On the Friday before her death, thought her very dangerous; if no better the next morning, she wanted me to go down and ask Esquire Gardner to come up. Did not ask her to make a disclosure that night. I told her she was very sick, and did not think she could stand it long. I had then no means of knowing what she wanted of Mr. Gardner. The next morning I went for Mr. Gardner, and requested him to see my mother; but he seemed disinclined to go; and directed me to go for Esquire Hazard. The result was, that Mr. Gardner and his brother, and Mr. Hazard, came together."

Cross-examined.—"Mother was in the west room; spoke in her usual tone of voice; and not as if angry. Did not urge his mother to make any disclosure; and did not know that she had been told, that unless she made a disclosure, the family would be broken up."

Here several witnesses were called to know the condition of Mrs. L. at the time she gave her dying testimony; but as there was considerable discrepancy in their statements, they are, for the most part, omitted. The most that can be said of extra-professional evidence on such a point, is that it is a mere expression of opinion, generally more or less biased, in relation to a matter of which the witnesses are not qualified to judge; and so ought not to be considered as evidence.

Miss Olive Eldridge, sworn.—"Knew Mrs. L. slightly; watched with her on Friday night before she died; appeared comfortable through the night; complained of no pain; had no chill; raised herself in bed when medicine or drink was administered."

Mr. Gardner testified, "that at the time Mrs. L. gave her dying testimony, she was *very sick*, but not so sick as he expected to find her, from what he had heard; spoke in a voice loud enough to be heard about the room."

Dr. Graves having been recalled, testified "that he believed Mrs. L. to have laboured under puerperal fever; he prescribed blisters, fomentations, &c. to the abdomen; the deceased had rigors followed by fever; during the paroxysm raved incoherently; and when the fever was off appeared much exhausted. During the morning of her death she lay in a stupid state; answered no questions, and did not appear to be sensible."

Here a long interlocutory debate occurred as to the admissibility of

the testimony of the deceased; the counsel on the one side claiming her confession as dying declarations, the other contending that it should be set aside, as not coming clearly under this character. It was however decided at last that it should be admitted.

Dying Declaration. Rodman Hazard, Esq., sworn.—“Asked Mrs. L. if she had sent for us to come there; said she had, in order to give us an account of her situation. I asked her if some evil-minded person had not been putting her up to accuse some innocent man; if so, she ought to avoid the commission of such a crime. She raised her hands, and said she would tell the whole truth, if it was her dying words; she said there never had been but one man, who had ever attempted to make her accuse any but the right one; that was Mr. J. Eldridge; he told her that she must keep it secret; for if it came out, both would have to go to the State’s Prison; told her to lay it to Jake, or Jacob Livingston; said she, ‘I shan’t do that, for I have not seen him this year and a half.’ She said, that the child was begotten in January or February preceding; that on a certain Saturday, Mr. E. brought a phial of medicine, and told her to take a teaspoonful every morning; the effect of which would be to destroy the child, and not to injure her; said she took on the next morning, Saturday, one teaspoonful; and on Sunday one; on Monday she felt that she could not take it; poured it into water and it would not mix; do not recollect whether she said she took it or not. On that morning I got out, and went across the lots to Daniel Crocker’s; there the child was born; witness asked her whether she knew what it was to be quick with child; said she did, and had felt a movement of the child long before that time; was with the deceased an hour or more.

Cross-examined.—“The Saturday alluded to, as the day when the medicine was brought, was the 21st June, about three weeks before witness saw her. She did not state where the medicine was; I cautioned her against accusing any one before she made the statement, &c.”

John Gardner, Esq. sworn.—Made similar statement to the above—“The deceased said that Mr. E. brought the medicine, and told her to take a teaspoonful every morning; she took it as directed; said it was the worst medicine she ever took, thought it would take the skin from her mouth and throat; the next morning took the same dose with similar effect; E. told her it would kill the child. She was taken unwell with flooding on Monday morning, set out the same day for her brother’s, in Stephentown; went across lots through the grass, which was very wet with rain; thinks she waded a creek; stopped at Mr. Carpenter’s, about two miles and a half from where she started to dry her feet, then went on till she reached her brother’s; was taken quite unwell immediately; sent for Dr. Graves; the fœtus was born after she had been there a few days; no doctor was with her; Polly, wife of Mr. Crocker, took the child.”

The testimony adduced to prove Mr. E.’s intimacy with the deceased was vague and unsatisfactory, the following will suffice.

J. Belcher, sworn.—“Last of January or the 1st Feb., Mr. E. called at mother’s early in the morning, about sunrise; mother was in the east room, she rose and went into the west room, and Mr. E. followed her; they were there alone ten minutes or so—I got up and went to the window, saw Mr. E. a few rods from the house, was in a fast walk, between running and walking,

looked back two or three times; was at the house every day almost, sometimes three times a day; had no particular business there."

Cross-examined.—"No bed in the kitchen or east room; never had much difficulty with Mr. E."

Dr. Hubbard, sworn.—"Knows the prisoner; the first time I ever saw the prisoner was in my shop in Pittsfield. He asked if I had *oil of savine*, said he wanted some for a physician in Stephentown; I let him have it; don't recollect how much, but think it was an ounce, in a phial. Enquiry was made of me by Mr. Langton whether I had any oil of savine, and also whether I had sold any lately. I told him I had, and was requested to go to Hancock and see if I saw the man to whom I sold the savine. I went and enquired for butter and cheese; was directed to go to Mr. Eldridge's. I did so; found Mr. E., and he was not the man to whom I sold the savine. I knew that the man's name to whom I sold the medicine was Eldridge, but knew not that there was any other man of that name in the town. As I was going to another place I saw a man in an alley leading a span of horses, and I thought he was the man who had purchased the savine; I turned back and talked with him on the subject of butter and cheese—I believe him to have been the man; may possibly be mistaken, but have no reasonable doubt. Afterwards saw him in the drug store I formerly owned; he spoke to Esq. Briggs, and asked him how he did; Mr. B. extended his hand very coldly, and Mr. E. said, 'don't you recollect me?' and Mr. B. said 'I think I do,'—afterwards I was walking on Mr. Russell's stoop, he, (Mr. E.) asked me 'if I was Dr. Hubbard?' my reply was 'no,' but on looking him in the face, I replied 'yes, I know you very well'—he said, 'Esq. Briggs and he wanted to see me,' I accordingly had an interview with them. He again inquired if 'I had ever seen him before?' I said 'yes;' he replied that 'he had never seen me before.'" Returned from Ohio to Pittsfield the 20th June, 1834; was in my store the same day, Friday; sold the savine that day or the next morning; never have used the *oil of savine*; it is a powerful medicine, and acts specifically on the uterine organs; is dangerous in large doses—ordinary dose from three to ten drops; common sized teaspoonful contains sixty drops or 5j. Savine is not often asked for. When Mr. E. bought it he asked me 'what do you doctors do with this medicine?' I answered, 'it is a tonic or stimulant.' He said 'you doctors can do what you choose, but we common people don't know any thing about it.'"

Cross-examined.—"A teaspoonful of *oil of savine* would not probably kill an adult; it might; it would certainly produce an inflammation of the stomach. Soon after Mr. E. was at my shop, another person enquired for the same article."

Here the testimony on the part of the commonwealth was closed. On behalf of the prisoner,

Erastus Cushing, M. D., was called and sworn.—"I am a physician; reside in Lanesborough—I made a *post-mortem* examination of the body of Mrs. L. the day after her death, in presence of Drs. Tyler and Palmer, of Lanesborough, and Dr. Thomas, of Hancock. Dr. Tyler was the oldest physician present, but is now sick. The following notes of the autopsy were kindly furnished

me by Dr. Thomas: "July 16th, 1834. Called to examine the body of Mrs. Lucy Livingston, æt. thirty-eight, who died July 15th, at 7 o'clock, P. M. Found upon the body no external marks of violence—surface pale; no discoloration except a few small purple spots on the posterior parts of the sides of the neck. The breasts were enlarged apparently, nipples surrounded with a dark areola, somewhat plump, and from them a limpid, whitish fluid was passed. The abdomen appeared to have been distended, and previous to death to have been contracting or resuming its natural size, as it exhibited the transverse folds and wrinkles incident to such a state of things. The abdomen was opened by an incision extending from the sternum to the pubis, and a transverse incision extending from near the umbilicus to the loins. The first appearance, after turning back the integuments, was nearly that of health—further examination shewed the *liver* a little inflamed and *gall bladder* filled with bile; *bladder* empty and more vascular than natural; *mesentery*, *colon*, and *rectum*, and some other portions of the intestines contiguous to the uterus and its appendages highly inflamed, and vascular—*uterus* enlarged to four or five times its natural size, so that most of the body of it was above the brim of the pelvis; it was apparently between six and seven inches long, and from four to five inches broad. The *os tincæ* was dilated, and distended, as we judged, to from one half to an inch and three-fourths in breadth. The *cervix uteri* was nearly obliterated; the whole cavity of the uterus adjudged to be capable of containing nearly a pint. No lesions, ulcerations, or disorganizations of structure were discoverable on any part of it. There was found in the superior posterior portion of the cavity of the uterus, a fibrous substance, somewhat circular in its form, flat, about one-fourth of an inch thick, indurated and fissured, of a florid appearance, covered with a greenish, muco-purulent matter intermixed with small coagula and grumous blood. The walls of the uterus were about three-quarters of an inch thick; the blood-vessels much developed, and very apparent traces of a most intense inflammation of its lining mucous membrane were present. Both fallopian tubes were elongated and enlarged; the cavities dilated to the size of a large goose quill, filled with grumous blood, and muco-purulent matter; their mucous membrane disorganized, and exhibiting traces of a highly inflammatory action and gangrene."

"The *os pubis* was removed, and the urethra, vagina, and rectum exposed. Throughout the whole length of the vagina, and lying between that and the rectum and the right ramus of the ischium, was found a large deposition of purulent matter, intermixed with flakes of coagulated lymph. Very considerable patches of gangrenous disorganized structure appeared in the cellular substance.

"*Vagina* was two inches in diameter—flaccid, and five or six inches in length. *Os externum* flaccid, flabby, and very dilatable. All the organs of generation throughout exhibited indubitable traces of high inflammation, and consequent gangrene and disorganization." (P. H. Thomas, M. D., Hancock, Mass.)

Dr. Cushing, (*continued*)—"Thinks that inflammation of the uterus was the

cause of death. The appearances were such, with the exception of the inflammatory signs, as we find in cases of abortion.

Cross-examined.—"Have read reports of cases where something resembling placenta had been expelled. If the *post-mortem* examination had been nearer the supposed delivery, could have pronounced with more certainty about this body. There is a morbid growth in the uterus, bearing some resemblance to placenta: this bore some resemblance to that; might have been that; have had cases of abortion; but a very small portion prove mortal. Such a course as Mrs. L. pursued would endanger the patient much. I should fear the consequences of riding four or five miles after abortion in a common lumber wagon, as she did. I think Mrs. L. came to her death by the diseased condition of the uterus. I know nothing of savine."

E. M. Bissell, Esq., sworn.—"Kept a drug store in Pittsfield. Early in July, within a day or two of the third, when I got home, a man came to the store, and asked the boy for oil of savine: I told him we had not got it; said he wanted it for a doctor in Stephentown; told him he would probably find it at Dr. Hubbard's, whither I directed him to go; had a heavy whip, and was a tall, thin man, thinner than Mr. Eldridge. I know Mr. E. of Hancock, and he was not the man who wanted the savine."

Mrs. Cracker, sworn.—"Am sister-in-law of deceased; saw her when she came from Hancock; was wet to her hips; feet and legs cold. Came on Monday, and staid nine days; said she came on foot across the fields, and waded the river; it was seven miles the way she went; was then flooding and continued so all the time she continued at her house; kept the bed nearly all the time. Peter carried her home in a common wagon; the day was cold, wet, and raw; she lived a fortnight afterwards; don't know that she was delivered of a child while there. I saw her at Hancock before she died. I asked her how she came to do as she had done. She said she did it to prevent her children from suffering, as they had threatened to leave her; said they had lied about her; told me I might go home, and when she got well, she would come down and tell me how they had abused her. I thought her deranged at the time. When at my house, something of a congealed nature came from her; it was wrapped up in a cloth and carried out of doors; saw the cloth."

By other witnesses it was proved that the deceased took a decoction of Southern wood, iron dust, &c., previous to her taking the *oil of savine*; she was also seen to jump from a high table to the floor several times while white-washing, and when told that it might injure her, she replied that she did not care if she did kill herself, she might as well be dead as alive.

Dr. P. H. Thomas, sworn. (Question.) "Was the conduct of Mrs. L., at the time she went from Hancock to Stephentown hazardous to her life? *Ans.* "I think it was." Q. "Was the exposure a sufficient cause to produce the appearances found on dissection?" *Ans.* "I believe it to have been amply sufficient." Q. "*Was the oil of savine sufficient to cause her death without the exposure.*" (*By the Court.* All that is necessary on the part of the Government is, to show that the

act of the prisoner concurred with other causes to occasion the death of the deceased. On the other hand, the counsel for the prisoner contended *that if sufficient causes for death could be found, exclusive of the agency of the defendant, he ought to be acquitted*, and quoted a paper by the late Professor Ashman, in the 27th No. of the American Jurist, for July, 1835, to the same point.) *Ans.* "In the situation Mrs. L. was in, the exposure to which she was subjected might have led to serious consequences, as sometimes slight causes lead to abortion, while at others they will produce no effect." *Q.* "Would you have expected to find the same appearances that you did, had death been caused by the exposure?" *Ans.* "I never knew a case of abortion prove fatal. Savine is very uncertain as an abortive. Most writers, especially Denman and Baudelocque, represent abortion as not dangerous. The first operation of the oil of savine would be an inflammation of the mucous membrane of the stomach and bowels. No examination was made of these organs. There were no external marks of inflammation. No emenagogues operate specifically on the uterus." *Q. (By the Court.)* "In common cases of abortion, would you expect to find a highly inflamed condition of the uterus?" *Ans.* "I should not; if it proved fatal it would be from hemorrhage or inflammation and gangrene. In ordinary cases of abortion, the result would be generally hemorrhage; a patient would not be able to live after gangrene had taken place. If a patient recovers from abortion, it does not follow that there has been no inflammation. Any cause which may tend to increase inflammatory action, would be likely, in the ordinary course of things, to produce inflammation of the uterus. Some articles are supposed to have more action on the uterus than on any other part, and that is the case with oil of savine."

Oliver Peck, M. D., sworn. *Question.* "Suppose a woman in a state of pregnancy, should get wet, and walk several miles, might not this be a sufficient cause of abortion and death?" *Ans.* "It might." *Q.* "It seems she had a flooding on Friday, and went away on Monday; under these circumstances, would not such conduct be highly dangerous?" *Ans.* "It would." *Q.* "And would the appearances have been such as were found, had such been the cause?" *Ans.* "It would; savine is an uncertain emenagogue." *(By the Court.)* "If abortion is begun under circumstances of excitement of the system, would it be likely to go on?" *Ans.* "It would." *Q.* "And would oil of savine produce such a state of the system?" *Ans.* "From six to eight drops would be an ordinary dose. Two teaspoonsful would be twenty doses." *Q.* "Would two teaspoonsful of oil of savine have destroyed this woman before it had acted on the uterus?" *Ans.* "It would."

Testimony was now introduced for both sides, to prove the character of the deceased for veracity. It appeared by the testimony, that she was a woman of a very doubtful, if not, disreputable character. Whether this circumstance should have had sufficient weight, as to set aside her dying declaration, will be the subject of some remarks at the conclusion of this report.

On behalf of the prisoner, Mr. Byington of Stockbridge, opened the defence. In substance, he remarked as follows:

"As the prisoner is advanced in life, his passions are subdued and his family ties increased. The farmers of Berkshire are not often in that prisoner's box. If what has been alleged be true, there was no design to murder the deceased; but it is a maxim in law, that if in doing an unlawful act, death ensues, it is murder. It must be proved that the oil of savine had an effect in causing death, which has not been done; now, if you can refer the death of the deceased to evident causes, you must suppose them to have been instrumental in causing the result, in preference to those of other kinds, and of a more uncertain nature. Dr. Peck testified, that jolting, the application of cold, exposure to wet, fatigue, &c., were more powerful in causing abortion than savine. The motive assigned in this case is criminal intercourse; but his honour, the chief justice, has said, that in cases of circumstantial evidence, the incidents must be clearly proved. Applied to this case, they must prove that the prisoner gave the oil of savine, and not infer it from the fact of an abortion having taken place. Neither has it been proved that he had criminal intercourse with her, nor any evidence of his having been the procuring cause of her taking the drug, or of having used persuasion to effect it. Did he give the oil of savine? did he persuade her to take it? There is no evidence that he did, except that of Dr. Hubbard, and none but his, to prove that he bought the article. The testimony of a person *in extremis*, is said to be good in law, so it is; but is it so in fact? The testimony shows her to have been an infamous character in regard to truth. Had she no motive to tell aught but the truth? Her motive doubtless was, by telling a falsehood, to lay the blame of her situation on another, and to shield herself and family from the disgrace of her conduct, by showing that another instigated her to commit the act. Did she make the declaration under the consciousness of impending death? Now let us look at her testimony in connexion with other facts. The witnesses disagree as to the time when the prisoner is said to have bought the savine; this point, therefore, is uncertain; and, according to the rule of the court as to incidents, goes for the prisoner. Now, the testimony as to identity is often false. (Cited a case from Phillips on Evidence, where false swearing, as to identity, caused the execution of the prisoner, who was afterwards proved to be innocent.) The abortion had commenced before the medicine had arrived there. Suppose the oil of savine was given, it is for the government to show that it had any effect in producing the abortion. Where there are many causes given, it is for you to assign such as are compatible with innocence."

Hon. Mr. Briggs for the prisoner. "Gentlemen of the Jury, the prisoner at the bar is charged with being accessory before the fact, and also as principal; it is the duty of government, beyond doubt, to prove the case clearly: if they have the case involved in clouds more or less dense, you must not hazard the life of the prisoner on doubts. It is a humane maxim, that it is better that ninety-nine guilty should escape punishment, than that one innocent man should suffer.

"The counsel for the government allege that the prisoner had criminal intercourse with Lucy Livingston, and that he procured oil of savine to get rid of the consequences of the act. The proofs of criminal intercourse are extremely uncertain. It is impossible that a man, in broad day-light, could have commit-

ted the act with which he is charged, with the doors unfastened, and all the means of access open. He had been in the habit of coming to the house, it is true, in a friendly manner, but in the bed where they say the deed was done were two little daughters; there were many children in the family and about the house constantly. Is it not as likely that Eldridge was there for an honest as a dishonest purpose? But he applied to Dr. Graves for medicine, and told Dr. G. the symptoms: was there any harm in this? No. He exhibited to Dr. G. no appearances that excited his suspicions; he expressed to Dr. G. no apprehension. When Dr. G. first saw her she flooded; her abortion had commenced. Esq. Hazard says that the deceased stated in her dying testimony that the prisoner told her the oil of savine would kill the child, but would not injure her, showing that he had no design against her life. *Is second hand testimony like that of dying persons safe?* No; and in this case, moreover, there is discrepancy in the statement. 'This woman was all the while in a state of delirium, or stupor, and therefore her statements are not safe. The woman stands as a partner to the crime, a *felo de se*—her testimony, if she could be here living, would not be taken, as being tainted with the crime of self-destruction. *A woman who could murder her own infant in her womb is now to take away the life of an innocent man by her testimony.* Dr. Hubbard was mistaken as to time. Dr. Graves told her before she took the oil of savine, if she ever took any, she would have an abortion. If abortion had taken place, why did she want a new medicine? The testimony as to the teacup is discrepant; her character for truth was bad, and she is liable to the same scrutiny as if living. The evidence of her good character does not come from persons living in the vicinity, and of the same rank in life, and is therefore uncertain. Her neighbours say it was bad; will you convict on her testimony. Dr. Hubbard says that on the 20th or 21st June, he sold oil of savine to Eldridge. He is mistaken. It is not an easy matter to identify strangers. Mr. Bissel says that on the 3d, 4th, and 5th July, a man wanted some oil of savine for a doctor in Stephentown; were there then two cases of selling oil of savine in Pittsfield about the same time? Mr. B. says that on one of those days he sent a man to Dr. Hubbard's, who had applied to him for oil of savine, as he had none himself, and that the man he sent was not John Eldridge, the prisoner, whom he knows well, and swears positively. We found by Palmer and Miss Eldridge, that the prisoner was sick at the time, and went to bed at night, and if he had got up immediately and gone to Pittsfield he could not have got there at the time sworn to, (it being ten or twelve miles) to get the medicine; Hubbard's shop must have been shut up. If you have a reasonable doubt as to Hubbard's testimony, it goes for the prisoner; you must lay it out of the case. No, J. Eldridge did not go to Pittsfield; did not get the medicine; did not give it or cause it to be given to the deceased."

Attorney General Austin for the the commonwealth.—"You, the jury, have not to execute the criminal; your duties relate only to establishing *one fact*; that is, whether the prisoner is guilty or not," (explained the law relative to the execution of prisoners and proceeded,) "you need not fear, therefore, that the ghost of the prisoner will rise up and appear to you; you may therefore safely pronounce him guilty, if you think so. We do not intend to charge him with

design in this case; and it is not so charged in the indictment; nor is it charged whether she was pregnant or not; nor whether an abortion was procured or not. The case is simply this. Believing that she was pregnant, he gave oil of savine, a deleterious drug, intending to bring on abortion, and an inflammation of the womb was produced, and she died. This is murder by the law; you are told to doubt the purity and the majesty of the law; this is wrong, totally so. If it is true that he gave a drug, intending to procure abortion and without intending to kill, and inflammation of the womb ensued and caused death, he is guilty of murder. This is a narrow compass of facts and law. *If the medicine contributed to produce the effect, the case is made out.* The law is to be settled by the court, whether this is murder or not, and it is proved by the dying declarations of the woman as given to Hazard and Gardner. I will now quote their testimony; testimony given in prospect of death has the solemnity of oaths, for that situation brings to view the solemnities of another world, and oaths given on the stand have the same effect of turning the attention to an hereafter. Dying testimony has the effect of preventing bad men from taking advantage of death. Her testimony is corroborated by the intimacy existing between the parties, and the freedom of frequent visits to her bed-chamber early in the morning. He goes to Dr. Graves, tells him she is sick; tells him of her having a flowing, *and that she told him what ailed her.* Now females don't communicate such particulars to men *usually*; it shows intimacy, I say, and goes to corroborate her testimony. She says he brought the article to her; and Hubbard sold it to somebody; does it follow because mistakes have been committed that you must believe *nobody*? It was said that another man went to Bissel's to get oil of savine. What of that? Suppose two men bought oil of savine, has the one purchase any thing to do here? Why do they not produce the Doctor in Stephentown who sent the man to Pittsfield to buy oil of savine? The man unlike Eldridge went to Bissel's, the man like Eldridge went to Hubbard's.

"Dr. Graves saw her at some time, if not on the 27th June; it is immaterial when this medicine was given: *it is not necessary to prove that it actually produced abortion; the intention is the crime, no matter what effects the article had on the woman*; he knew she was pregnant, supposed oil of savine would produce or accelerate an abortion; where he got his knowledge of the supposed effects of oil of savine is no matter; his acts show that he supposed the natural effects of oil of savine is to produce abortion; so say the books; also, that abortion is dangerous to the mother. Did she die in the manner stated in the indictment or not? *No matter whether she died of abortion or not; no matter, if the action of oil of savine was accelerated by other causes,*" &c.

Judge Putnam charged the Jury.—After stating the several counts in the indictment, the Judge proceeded in substance to remark. "The government propose to show that the deceased was pregnant, and was desirous of procuring abortion, and that she took oil of savine by the procurement and advice of the prisoner, resulting in inflammation and gangrene of the uterus. The government must make out the charge.

"The oil of savine is an acrid poison, and used for the purpose of causing abortion; it is not, however, always certain of producing that effect. The effect

of oil of savine is in the stomach, and *it would tend to produce effects such as here discovered!* It would be likely, I say, to produce that effect, i. e. inflammation of the womb. No individual has a right by blows or potions to put human life in jeopardy. The party who endeavours to procure abortion without endangering life is, notwithstanding, answerable if death ensues. If, however, the prisoner advised the deceased to take the oil of savine, and yet she subsequently exposed herself to wet, cold, and fatigue, adequate to cause the effects that followed; and if it appear clearly to your minds that such exposure caused her death, and *the savine did not in any degree* contribute to it, then it is your duty to clear the prisoner. If the poison contributed to the death, the prisoner is guilty; if it did not, he is innocent. Still, if the exposure would be more likely to produce death, but if the poison contributed to that effect, it would be murder." (Quoted Lord Hale: "If a man give a blow, not mortal, yet the person receiving it dies in 366 days, it is murder.") "If the poison alone would not have proved fatal, yet, conjointly with the exposure, it had that effect, then is the prisoner guilty. It is only necessary that it should have co-operated with other causes. The character of the witness is to be weighed by the jury. Fourteen witnesses say her reputation is bad. A *particeps criminis* is in law a witness; it is lawful evidence. A bad person may tell the truth: you must, however, weigh it. The government produce eight witnesses who say her character is good. Any person may have heard things said against *any body* and *every body*. There was great familiarity between them, as testified. The defendant's council say there was no motive; but she stated in her dying declarations there was one: for the defendant told her, if it was disclosed, they would both go to the State's Prison. He asked Dr. Graves to go and see her; how should he know her circumstances as to menstrual discharge, &c.? This also shows familiarity. Did the defendant procure the oil of savine? According to Dr. Hubbard, he procured the article of him in Pittsfield. Is Dr. H. to be credited or not in this matter? Dr. H. went to Hancock to ascertain to whom he sold the article, and ascertained Eldridge to be the man. Afterwards, an experiment was tried on Dr. H. at Pittsfield. E. wore at this time a fur cap. The experiment seems unsatisfactory: the cap he wore altered his appearance, no doubt; on the other hand, it is said to be proved that he was sick at home at that time. His daughter testifies to this, and also that the day was Friday; but you must weigh the inducements which would lead a child to testify in behalf of her father. Could she certainly recollect the precise day; if she is right, Dr. H. is mistaken. She don't say he was so sick as to be confined to the house.

"It is proved that the deceased was pregnant, and that the defendant told her to lay it to Jake; she said she would not, he having been absent more than a year.

"Gentlemen, it is your duty to administer justice in mercy and in truth; and may God direct you to a right decision."

After an hour's absence, the jury returned a verdict of NOT GUILTY.

Remarks.—There are some considerations suggested by a history of this trial, which are perhaps worthy the attention of medical men.

In many particulars, it bears a striking resemblance to the case of Miss Burns, for whose murder, Mr. Charles Angus, of Liverpool, was tried in 1808, and which excited a great degree of public attention. There is much reason to believe that *savine* was the article made use of in her case, in conjunction with mechanical means, to destroy the fœtus; as it was proved on the trial that a bottle which had contained the oil of *savine* was found in the bed-room of the prisoner, and it was afterwards proved that he purchased 5iv. of the article of an apothecary. The first symptoms of which she complained, was pain in the bowels and great thirst, which was followed by vomiting of a black matter, and afterwards of a green matter. The thirst increased, and she had great difficulty in passing her urine. The vomiting continued all that day, and was succeeded by violent purging, which continued till her death. In a late lecture on medical jurisprudence, by Professor A. T. Thomson, reported in the *Lancet*, the lecturer, after stating that the appearances on dissection, in the case of Miss Burns, indicated severe inflammation of the mucous membrane of the stomach, expresses his belief that *savine* was partly the cause of her death, and remarks:

“At the same time, the medical evidence was not creditable to the doctors; the dissection was performed in the most slovenly manner: neither was the state of the mouth and fauces examined. The greatest objection to the idea that *savine* oil was the poison, is the absence of the strong odour of the *savine*. The objections thrown out by Dr. Carson, which obtained the acquittal of the prisoner, mark more strongly than I can express, the necessity of a knowledge of the medical matter connected with such legal investigations for gentlemen of the law. The counsel on the part of the crown should have known that vegetable poisons cannot be detected by any tests of a chemical nature, and that the medical testimony, as to the symptoms and the appearances of the body after death, must aid other circumstantial evidence to obtain the ends of justice. In the case of Miss Burns, the pathological and anatomical facts are so striking and satisfactory, in addition to the finding of the bottle marked *savine* oil, that the proof leaves little doubt on the mind. It is true that very large doses of this oil have been taken: *even to the extent of a hundred drops*; as in a case related by Foderé, when it was taken in that quantity for twenty days, to cause abortion, and yet the female carried the child to the full time. In another case also, related by the same author, where the powder was taken, vomiting, hiccough, heat in the lower belly, and fever of a fortnight's duration, were induced, and yet the female was not delivered until the full time. But in hearing these cases, you must recollect there is nothing so variable in strength as oils of this description, which are very frequently weakened by the addition of alcohol or bland and fixed oil; and in Miss Burns' case, the abortion was not left solely to the action of the drug, which was, nevertheless, the probable cause of the death of the mother.”

In the case of Mrs. Livingston, there is good reason to believe that she took no genuine oil of savine at all. None was ever found in her house which was identified; and if what remained in the phial, which one of the witnesses stated to have been about a tea-spoonful, was the remains of what Dr. Hubbard said he sold to Mr. Eldridge, then it is very evident that Dr. H. sold for savine oil what was something else. Although Mrs. L. took a tea-spoonful at a time, for at least three mornings in succession, there is no evidence that it caused pain in the stomach, vomiting, purging, or any other symptom than a bad taste in the mouth, which certainly could not have happened, had it been oil of savine. Since this trial occurred, an unfortunate female of this city died in consequence of taking one drachm of this article, for the purpose of causing abortion. Besides, on the morning of the third day after she commenced taking the medicine, Mrs. L. walked seven miles across the fields, wading a creek, &c., and this after she had commenced flooding, which it is not at all probable she could have done after taking four or five or more drachms of this acrid oil. It should, moreover, be recollected, that nothing is more common than to find a spurious article in the shops of the apothecaries, especially in the country, labelled *oil of savine*, which is nothing more than spirits of turpentine, or alcohol, strongly tinctured with savine; and such may have been the article Mrs. L. took. It is certainly a matter of regret that the physicians did not examine the state of the mucous membrane of the stomach and bowels, as it must have thrown some light on the question whether the deceased had taken any thing of a very acrid nature: as it is, we are left to surmise their pathological condition from other symptoms. The immediate cause of death was unquestionably the inflammation of the uterus, brought on by exposure; and if the articles she took for procuring abortion had any effect in causing the result, it doubtless was so slight as not to be taken into account. "*De non apparentibus et non existentibus eadem est ratio.*" The doctrine advanced by the Attorney General "that it was not necessary to prove that the savine caused the abortion, but that the intention constituted the crime," seems to us a monstrous one. Was the prisoner to be hung for giving an article to produce an effect *which it did not produce*? It must be admitted, that if an article is administered to bring on abortion, and death ensues, the accomplice is as much chargeable with the death of the mother as with the destruction of the fœtus; the ignorance of the fact that all abortives endanger the life of the mother equally with that of her child, is no excuse in law. The opinion of Judge Putnam, too, deserves some notice. He stated to the Jury that the use of savine

would produce such effects as were discovered on dissection; viz. inflammation of the uterus. But where did he learn this? Certainly not in books. The only case on record which occurs to us, besides that of Miss Burns, is one recorded by Professor Christison, where a girl took a strong infusion of savine leaves to produce abortion; violent pains in the abdomen, with strangury, ensued; in two days after taking it she miscarried, and in four days after that she died. On dissection, there was found extensive peritoneal inflammation; the inside of the stomach was of a red tint, and the uterus presented only recent signs of delivery. Galen, it is true, asserts that savine acts with sufficient energy on the uterus to destroy the fœtus, and in the *Dictionnaire de Matière Médicale*, vol. iii. p. 696, it is stated that this article is constantly used by the negresses in the Isle of France to produce the same effect; but it is no where laid down that it will cause a specific inflammation of the uterus sufficient to cause death.

This shows how important it is that judges, as well as lawyers, should know something of the action of medicines upon the human system, and thus avoid laying down positions which, if not set aside, might lead to the punishment of the innocent. In the case above reported, it will have been observed by the reader, on how trifling a circumstance apparently the fate of the prisoner hung, and how vastly important it was that medical opinion should have been properly guarded, and stated with care and circumspection. The Court had already stated, that "if the savine had contributed, *in any degree*, to produce the result, if the exposure had been the chief cause, but still the savine had co-operated in producing death, then ought the jury to bring in the prisoner guilty."

Chief Justice Shaw then proceeded to question Dr. Peek as follows: (*Question.*) "If abortion is begun under circumstances of excitement of the system, would it be likely to go on?" *Ans.* "It would." *Q.* "*And would oil of savine produce such a state of the system?*" This was truly bringing the matter within the compass of a nut-shell, and the answer would have rejoiced the heart of a John Hunter or an Abernethy; it was "*from six to eight drops of oil of savine would be an ordinary dose; two tea-spoonsful would be twenty doses!*" The case was not strengthened by the next question—"Would two tea-spoonsful of oil of savine have destroyed this woman before it acted on the uterus?" *Ans.* "It would." Thus leaving it to be inferred, that she had not taken the oil of savine, or if she had, she had died from other causes. The doctrine laid down by the court in this case, appears to us to be liable to great abuse, and medical men are called

upon by all the motives of humanity, to express their opinions with extreme cautiousness. It is, indeed, impossible for human judgment, enlightened by the greatest experience and the most extensive knowledge, to decide positively as to the comparative influence of a variety of causes, all operating perhaps at the same time; such is the difference in the constitutions, the temperaments, and the susceptibilities of different individuals. It is often impossible, even, to determine, as in the above case, whether the effects are to be attributed to one, or to several causes; and it would be the height of inhumanity and presumption, to decide that the criminal cause alleged, was the efficient one, when there were others of sufficient potency to produce the result. In illustration, a case from *Zacchias*, quoted by the late Professor *Ashman*, is in point.

"When the plague was raging in the city," he remarks, "*Silvius Amorus* being suddenly provoked by one *Ansovinus*, struck him on the head. The wound was considerably severe, but there was no fracture of the bone, nor any other injury, which should render it in itself dangerous. On the third day, *Ansovinus* was seized with a violent fever, with very acute pain in the head, and vertigo, and vomiting of bilious matter. At the same time the wound became greatly inflamed, and the next day mortification began, and livid spots appeared over the whole body; on the sixth day he died. *Silvius* was accused of killing him; and his friends applied to *Zacchias* for his opinion upon the case. *Zacchias* decided that he was not guilty of the homicide. For as the wound was not, in its nature, a mortal one, it was to be presumed that *Ansovinus* died of the plague independent of the wound."

Cases are continually occurring in practice where the cause of death is either unknown, or difficult to be ascertained; let the medical witness then lean to the side of mercy, and either confess his ignorance, or give such an opinion as may not be used to the condemnation of the innocent. Perhaps the importance of medical testimony is not sufficiently considered; if it were, it is doubtful whether assertions would be hazarded, and opinions submitted so freely, as they are.

"In matters of science," says *Ryan*, "opinions are received as evidence; but witnesses, in general, speak only as to facts."

"Evidence of character is founded on opinion; and the opinion of a medical man, is evidence as to the state of the patient."—*Phillips' on Evidence*.

"On trials for murder by poisoning, the opinions of medical men are frequently required to determine whether the deceased did come to his death by poison. But when opinions of physicians are given in evidence, the facts on which they ground their opinions must be stated."—*Mass. Reports*, 225.

In the case of *Mrs. Livingston*, the appearances on dissection, prove clearly that she had lately been delivered of a foetus. *Dr. Cushing* testified that the breasts were enlarged; the nipples surrounded with a dark areola; and that a whitish fluid, resembling milk, was pressed from them. The abdomen appeared to have been dis-

tended; (although the "transverse folds and wrinkles" may have been caused by former pregnancies;) the uterus was about four or five times its natural size, being from six to seven inches long, and from four to five broad; the os tincæ was also dilated, and the *cervix uteri* nearly obliterated; the cavity of the uterus contained nearly a pint; all going to establish the fact of her having been recently delivered. That violent means were used to procure abortion was also made evident, by the witnesses, who testified that she took southern-wood, quicksilver, iron dust, &c., and jumped from the table to the floor; but it does not so clearly appear that she took oil of savine; or if she did, that it was the cause of abortion. The verdict was unquestionably correct according to the evidence. As to the dying declarations of the deceased, on which the government seemed chiefly to rely for the conviction of the prisoner, they were justly set aside by the jury. For, in the first place, there was not satisfactory evidence that Mrs. L. considered herself to be in a dying state, or even in a state of imminent danger, without which such testimony can not have the nature of an oath; and in the next place her character for veracity was such as to invalidate her testimony, had it been given in a court of justice; and, moreover, a sufficient and satisfactory cause could be assigned for her attempt to fix the reproach of her pregnancy upon a respectable man.

"The dying declarations of an accomplice, (*says Philips on Evidence,*) are admissible; for the accomplice himself would have been a competent witness, if he had been living. This was determined by all the judges in *Margaret Finckler's* case. The greater part of the jury were of opinion, in this case, that the declarations of the deceased were alone sufficient evidence to convict the prisoner, on the ground that they were not to be considered as evidence coming from a *particeps criminis*, as she thought herself dying at the time and had no view or interest to serve in excusing herself, or fixing the charge unjustly on others. *But others of the judges held that her declarations were not to be so considered, and therefore required the aid of confirmatory evidence.*"

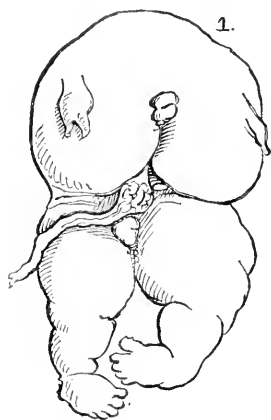
Precisely such was the fact in the present case; and for want of such confirmatory evidence, was the prisoner acquitted. It is surely a wise provision in the law, that although the declarations of a dying person are admitted on the supposition, that in view of his awful situation, he has no motives to misrepresent, but, on the contrary, the strongest motives to speak without disguise and without malice; yet that the party against whom they are produced, may enter into the particulars of his state of mind, and show that the deceased was not of such a character, as was likely to be impressed by a religious sense of his approaching dissolution.

New York, April 18th, 1837.

No. XLII.—FEBRUARY, 1838.

ART. VII. *Case of Monstrosity, in which the Brain, Heart, Lungs, Stomach, Liver, Spleen, Pancreas, and Right Kidney were wanting.* By J. S. B. JACKSON, M. D., of Boston. (Read before the Boston Society for Medical Improvement, July 10th, 1837.)

Mrs. B., æt. 20, married three years, and has one child now living. June 25th was confined prematurely, being then about seven or eight months pregnant; attended by Ward N. Boylston, student of Dr. Shattuck's, through whom the specimen was presented to the Society. One well-formed child had been expelled, when the subject of this case, presented by the feet, and was withdrawn. The labour, other-



wise was natural, and no cause could be assigned by the mother for the malformation. The case, without the dissection, was published by Mr. B. in the Boston Medical and Surgical Journal for July 19th, accompanied by a drawing on stone, which was made by Mr. James Colman, student of medicine, from which the accompanying wood-cut has been taken, and which renders a general description of the external appearances unnecessary. A very successful cast, in plaster, was also made by Dr. O. W. Holmes for the Cabinet of the Society.

June 30th, the *dissection* was commenced. The weight, then, was two pounds fourteen ounces, (avoir.,) having lost about one pound since it was born. Cutis had a bright yellow colour in several places where the cuticle had been removed; but elsewhere it was natural and the whole appearance quite fresh. Length, in a straight line, ten and a quarter inches; greatest width, five inches; and circumference at the same part, fourteen inches. The protuberance on the median line, and in front of the thorax, it may be premised, represented the head, so that the specimen was not strictly acephalous, though it perhaps deserved the name as well as almost any case on record. This protuberance was two and a half inches from the vertex, fleshy to the feel; and, for the most part, covered by cutis; it had a neck smaller than the body, and there was some dark hair about it, which extended upwards about an inch and also down into the sulcus. It consisted of two portions; the upper was from four to five lines in diameter,

rounded, and had a slight sulcus on the anterior face; the lower portion was considerably smaller than the upper, with which it was, for the most part, connected; but terminating anteriorly in two points one above the other, and directed upwards. Upon the anterior face, and between the two portions were two small openings, one on each side, and leading into cavities, which will be described in another place. On the back nothing remarkable except an appearance somewhat resembling a small cicatrix, one and a half inches from the vertex.

The upper extremities consisted of a very imperfect hand growing directly from the sides of the trunk. The right, which was considerably the largest, had upon it two fingers, and looked not unlike the extremity of a lobster's claw. Length one and two-third inches; greatest width three-quarters of an inch; inner finger eight lines long, six broad at the base, and two at the tip; the outer one was four lines long, four broad at the base, and one at the tip. The left upper extremity, which is scarcely seen in the drawing, consisted of a single finger, of a rounded form, thirteen lines in length, from four to five transversely, and diminishing to two at the tip. All of the fingers, as also most of the toes, had a slight transverse fissure in the place of the nail. Both feet turned directly in, the dorsum being directed forwards. Each had four toes, which were, for the most part, short, rounded, and fleshy to the feel; on the right these were at equal distances; but on the left the first and second were far apart, as also the third and fourth. Otherwise the lower extremities were well formed.

Anus imperforate. Penis sufficiently well formed, the prepuce adhering to the glands as it does frequently, if not generally, in the fœtus; urethra pervious. Nipples very distinct.

Of the umbilical cord there remained two and three quarter inches, a considerable portion having been left with the placenta; it was very small and much shrivelled. At its junction with the abdomen there was a hernia of the intestines, covered only by a delicate membrane, and extending into it one inch; the same appearance was noticed during the last year in the case of another monstrosity.

Integuments excessively œdematous and constituted by far the greater part of the bulk of the fœtus; contained very little fat. On the back of the thorax and towards the sides there were several large cysts, lined by a delicate, smooth, and polished membrane, and filled with clear, yellowish serum; varied as to size and form, but the largest, situated just to the left of the spine, would probably have contained $\frac{3}{4}$ iiss.

Cavity of the abdomen was imperfect, but more capacious on the

right side than on the left. There were contained within it the small and large intestines, the left kidney, two renal capsules, testicles and bladder. The stomach, liver, pancreas, spleen and right kidney were wanting.

The greater part, if not the whole, of the small intestine and a considerable portion of the large were contained within the hernial sac. The convolutions of the small intestine adhered together at many points, and to the parietes of the abdomen; length eleven inches; diameter two to two and a half lines; terminated bluntly at the upper extremity in a cul de sac, and was nearly filled with a whitish, curdy substance. Large intestine eight inches long and about two lines in diameter. The upper part of the intestine contained a considerable quantity of white crumbling substance, having a peculiar, granular, and partly scaly appearance; the rectum was filled with transparent mucus with some traces of milky looking fluid. Cæcum well formed. The rectum terminated in the bladder just in front of the prostate gland by a very minute opening, though large enough to allow the bladder and the rectum to be inflated, either one from the other.

A perfectly similar communication was found in two other monstrous fœtuses dissected during the last year, in each of which the anus was imperforate; also, in the case of two infants, born with imperforate anus, but otherwise well formed, one of whom was examined on the 8th of last March, and the other on the 16th, each of them having lived just a week. In each of these the rectum communicated with the bladder by a valvular opening just where it did in the present case. It would be interesting to determine what relation, if any, exists between this internal communication and imperforate anus, and whether the latter is ever found without the former or some malformation analogous to it. In a monstrosity which I dissected a few years since the rectum opened into the bladder, not where it did in the above cases, but high up on the left side. Several other cases might be quoted, if necessary, from surgical writers; yet, however frequent this communication may be, it is no less certain that many infants born with the anus imperforate are saved by an operation, the internal opening, if there be one, becoming obliterated as a new one is established.

Mesentery sufficiently well formed, but the omentum was wanting.

The kidney reposed upon the front of the spine, or a little to the left of it, and opposite the lowest ribs. Length eight lines; width four; pelvis and mamillary processes quite distinct; ureter half a line in diameter, and pervious throughout. Renal capsule very small and closely attached to the concave edge of the kidney.

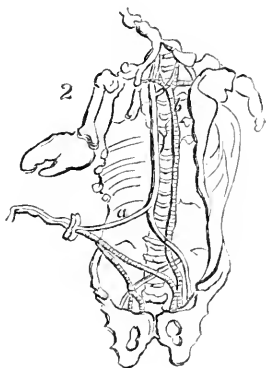
On the right side there is no trace of kidney or ureter, but just to the right of the spine and opposite to the left kidney there is a large renal capsule, of a somewhat pyriform shape, seven and a half lines long and four lines at the widest part.

The bladder was one inch long and well developed.

The testicles were situated just above the line of the pelvis; two and a half to three lines in length, and well formed. Vas deferens wanting on the right side; on the left it was traced very nearly to its termination in the urethra, but no vesicula seminalis could be found. Prostate gland well developed.

The heart was entirely wanting. The circulation, then, must have been carried on either by the vessels alone, which seems not impossible, or it was assisted, perhaps altogether maintained, by the heart of the other *fœtus*. The blood must have entered the monstrosity by the umbilical arteries, and been returned by the veins, the reverse of what usually happens, as the valves would have prevented it from reaching the capillaries of the extremities through the veins. These valves were unfortunately overlooked in the dissection, and their existence has been presumed, as they were found very distinctly in a mature *fœtus* which was recently examined for the purpose. If, then, the two placenta formed one continuous mass, another neglected point, and the umbilical arteries of the two cords communicated freely, there is no great difficulty in supposing that the heart of the well formed *fœtus* may have carried on the circulation of both.*

The umbilical vein (*a*) divided into two large branches, about half an inch from its entrance into the abdomen; one passed down along the spine, rather towards the left side, and divided at the usual place into the two iliacs, which again divided to supply the pelvis and lower extremities. The other branch passed upwards at some little distance to the right of the spine, and divided at the upper part of the thorax to form the right and left subclavian and jugular vessels. About the middle of the thorax it sent off a large branch, corresponding apparently



* *December 2nd.* Mr. Boylston has had the kindness to call at the house of his patient, where he saw the mother; she has frequently been with women during labour, and knows the appearance of a placenta; took charge of it in this case after her daughter was delivered, and observed that it was small and divided

to the vena ozygos, being directed towards the intercostal spaces, and to a mass which is found in the place of the right lung.

The branches of the aorta were generally smaller, thicker, and more opaque than those of the umbilical vein; the difference in structure being such as distinguishes the arteries from the veins. The two sets of vessels were proved to be entirely distinct by blowing air into each of them separately when the abdomen was first opened, it being found that neither could be inflated from the other. At the upper part of the thorax the aorta (*b*) divided into the right and left subclavian, from which were sent off two very small carotids. The main trunk descended in front of the spine, or a little towards the left side, and furnished the intercostals; within the abdomen it was found on the right of the umbilical vein; instead of bifurcating as usual, it was continued along the pelvis on the left side, and terminated in the umbilical, and in the external and internal iliac arteries; on the right side the iliacs formed their own umbilical, and were quite distinct from those on the left side, so far as could be ascertained, the vessels having been coarsely injected when the dissection was somewhat advanced. In the front part of the thorax, beneath where the sternum should be, there was quite a network of vessels.

The cavity of the thorax, on each side of the spine, was nearly filled by what may have been the rudimentary lungs. The texture, for the most part, was close and very nearly resembled condensed cellular membrane; along the spine were several large cells filled with serum, and suggesting the idea of the lungs of a turtle; no pleural cavity; on being cut through, they presented no appearance of vascularity, and certainly nothing which resembled the air-passages.

The protuberance upon the front of the thorax consisted mainly of integument, without any trace of brain. The openings before mentioned led to cavities, one on each side, and quite distinct; they were sufficiently large to admit a probe, extended backwards three-quarters of an inch, and terminated in a cul de sac; the inner surface was smooth and polished, except just within the openings, where it was thickened and rough. Taken in connexion with the bones about them, these cavities bore some resemblance to the nostrils. Within the lower point of the lower portion of the protuberance, was a cavity about one and a half lines in diameter, and having slightly attached

into two portions; this last circumstance was noticed, as she herself once had twins, when, as she remembers, the after-birth formed one continuous mass. This statement was freely and confidently made, and certainly seems to deserve some credit, notwithstanding the lapse of five months; if true, the circulation of the blood must have been carried on by the vessels alone.

within it the crowns of two incisor teeth, of a size proportioned to that of the fœtus; connected with one of them laterally was a third, but smaller than the two others.

The spinal marrow was fully exposed by separating two of the dorsal vertebræ; it was of the usual size, and nerves were seen going off from each side. It was still more satisfactorily shown at its upper extremity, the posterior laminæ of the three upper vertebræ being united by cellular membrane, so as to be easily separated; the spinal marrow there bulged slightly, and measured one-third of an inch transversely, then diminished and terminated in a blunt point; nerves were sent from it to form the axillary plexus, which was large on each side. The sciatic nerves were fully developed. Within the thorax and abdomen were found several ganglia of the sympathetic nerve with some of their small filaments. Could find no trace of par vagum or of the phrenic nerves.

Muscles of the trunk and lower extremities sufficiently developed; elsewhere imperfect.

The skeleton has been prepared and placed in the cabinet of the Society. There were nineteen vertebræ, besides the sacral; three situated above the first rib are partially united, and the bodies of two or three of the upper dorsal are irregularly ossified. Ribs, nine on the left side, and ten on the right; all well formed, except that those on the right side have hardly a trace of cartilage. Sternum consists of two lateral portions, not at all ossified, separated widely except at the lower extremity, where they closely approximate, but do not unite; the left portion is attached to the clavicle and to the cartilages of the ribs, the right to the clavicle only. There is a scapula on each side, sufficiently large, though not well formed, the right being the most perfect. The clavicles are short, broad, and stout, and bent to somewhat of an angular form. The right upper extremity wants the humerus, but there is a slender bone, about an inch long, which resembles the ulna, and attached to its upper extremity a cartilage, about two and a half lines in diameter, which may be the head of the radius; these last are attached by ligaments to the glenoid cavity: the carpus exists, but the distinct bones or rather cartilages were not evident; there are two metacarpal bones, about five lines in length, one is slender and attached to the long phalanx above; the other, broad and stout, bifurcated, and is connected with both the phalanges; the long phalanx measures nine lines and has three bones; the short one measures six and has two.

In the left upper extremity there are two very singular bones in a cartilaginous state which it would be difficult to name; the largest,

equal to three lines in diameter, is attached by condensed cellular membrane to the glenoid cavity and acromion process of the scapula; the second, one line in diameter, is attached to the first; then follows a well-formed metacarpal bone, five lines in length, and a phalanx eight lines long and having three bones. Pelvis and lower extremities well formed, except that the feet are turned in, have only four metacarpal bones and phalanges, and have one of the cuneiform bones misplaced, being set back behind the others. Connected with the upper extremity of the spinal column is a row of eight small bones, apparently the rudiments of a head, and terminating in the protuberance seen externally in front of the thorax; they are altogether one inch in extent, and for the most part exceedingly irregular; two nasal bones, however, can be made out, and a third, containing the teeth already mentioned, resembles a distinct bone which was once found in a fœtus with hare-lip, and was supposed to be an intermaxillary.

Cases very nearly resembling the above, may be found in the *Mém. de l'Acad. des Sc.* for 1720, 1740, and 1703; and in the *Phil. Trans.* for 1767 and 1809. A complete summary, however, of what has generally been observed, may be found in the article *Monstrosity*, in the *Dict. des Sc. Med.* by Chaussier and Adelon, taken from a *Memoir* of Beclard's on *Acephalous Monsters*, and illustrated by a dissection of a well marked case from the original work.

ART. VIII. *Remarks on the Tuberculous Affections, with a Translation of the Instructions recently promulgated by the Academy of Medicine of France, relative to the study of Phthisis in different Climates, &c.* By W. W. GERHARD, M. D., Physician to the Philadelphia Hospital.

If there be any disease which, from its frequent occurrence and fatal termination, causes the despair both of physician and patient, that disease is the tuberculous affection. Whether we designate it as pulmonary phthisis, meningitis of children, chronic peritonitis, or scrofula, the radical disorder is the same, and presents similar anatomical characters. All the forms of disease, characterized under the term tuberculous, resemble each other in their anatomical lesions, which consist in the deposit of tuberculous matter. That is, a yellowish or grayish substance, without vessels, usually assuming a rounded form, but sometimes amorphous, or even deposited in the body of the tissues,

so as to give rise to the same appearance that would be produced by dipping the tissue into tuberculous matter, and then allowing it to harden. In these cases the infiltration of tuberculous matter through the tissue of the lungs or spleen, is often as perfect as that of wax through the cells of a sponge tent. The peculiar structure of the organs in some degree modifies the form of the tuberculous deposit; but however much its external conformation may vary, it is still so regular in its internal character, that it can always be recognised by attentive observation.

The variety in the symptoms of tuberculous diseases arises partly from the difference in the structure of the organs affected, and partly from the degree of inflammation which may accompany their formation. The functions of an organ are usually disordered when it becomes the seat of tubercle; and hence every local disease, which is accompanied by a secretion of this substance, offers the compound symptoms of the general tuberculous disorder and of the local lesion. Where the local symptoms predominate, the general character of the tuberculous disease is lost sight of, and the affection is regarded as an ordinary inflammation. Thus, most cases of tuberculous peritonitis and meningitis are even now considered as simple inflammatory affections. In the lungs, the local signs are much less intense, so that time is allowed for the development of the symptoms of the general disease, and pulmonary phthisis is looked upon in the light of a mere chronic phlegmasia. It is this moderate development of the local signs which has caused the true nature of pulmonary consumption to be much better understood than that of many analogous diseases.

When the tuberculous affection is extremely acute, it assumes more or less of the inflammatory form, which partly arises from the strong febrile reaction caused by the disease itself, and partly from the inflammation, which may occur in the tissue, which is the seat of the tuberculous deposit. In some cases the symptoms of inflammation predominate over all others. Thus in very acute tubercular consumption, the febrile movement is often much higher than it is in ordinary typhoid or in remittent fever; and as the lungs do not always suffer so much as to give rise to important functional signs, an acute pulmonary phthisis may be confounded with an ordinary remittent. This error of diagnosis is both frequent and difficult to avoid. In the tuberculous disease of the serous membranes, there is almost always an inflammatory action around the morbid deposits, and we thus have the symptoms of genuine inflammation with those of a tuberculous disease. As the signs of the serous inflam-

mations are generally much more distinct than those of the tuberculous disease, we are tempted to exclude the more important but obscure complication.

From the preceding remarks it may be seen that we use the terms tuberculous disease in connexion with a particular change in the living body, as well as with the anatomical lesion, termed tubercle. That is, although the aid of pathological anatomy has enabled us to detect the effect of a particular disorder of the economy, which effect we term tubercle, yet by an inquiry into the history of the disease we discover a series of symptoms which precede the morbid deposit. These symptoms are probably in all essential respects the same, but our power of observation is not in all cases yet sufficient for us to detect them in the midst of the various functional alterations which may attend, and in some measure conceal them. Pathological anatomy affords us but little direct aid in the search after the earlier symptoms of these diseases, but it opens the way for their discovery, and by proving that a tuberculous deposit has actually occurred, when these symptoms have continued for a length of time, it enables us to affirm with confidence that whenever they are found, the disorder will terminate in the secretion of tubercle unless arrested at an early stage. The physical signs afford nearly the same degree of proof as the anatomical lesions; a tuberculous deposit at the summit of one of the lungs, especially after it has begun to soften, may be recognised as certainly by the aid of auscultation in the living as by the sight and touch in the dead body. Connected with the physical signs we have a series of symptoms of slow and insidious growth, whose constant co-existence with physical changes, after they have persisted for a certain time, proves to us, that at an early stage, when the physical signs were yet absent or doubtful, the disease was already present, although it has not yet marked the patient with an ineffaceable impression.

On this account, in the study of tuberculous diseases, an experienced auscultator reaches a point when he values the physical signs rather for their negative than their positive evidence, for proving to him that though the general symptoms are indicative of these affections, the peculiar anatomical deposit has not yet occurred, and that the chances of arresting the disease are therefore greater. After many years attentive observation of this affection I have become convinced that an error of diagnosis, which is mischievous to both patient and physician may readily be committed, and that one who would be satisfied with the absence of physical lesions as sufficient proof of the non-existence of a tuberculous disease, must overlook the early or forming stage. The great proof of skill in the diagnosis of these

diseases, is to distinguish the slighter physical lesions and the antecedent symptoms which have given rise to them. The physical means of exploration are more applicable to the tubercular than to the cancerous or other general chronic diseases, merely because in a large majority of cases, tubercles are secreted in the lungs at an earlier period than in other organs, and that in that part they advance most rapidly. This election, as it is sometimes called of the lungs as the favoured seat of tubercle, gives an extraordinary importance to pulmonary phthisis over all other chronic disorders, and is the reason that the French Academy of medicine has spoken only with reference to pulmonary consumption. Strict analytical reasoning requires an examination of the signs and pathological anatomy of tubercles in other organs than the lungs, otherwise an essential character of the disease might be forgotten. We must therefore remember that as phthisis constitutes only one of the numerous forms of tubercular diseases, we should be careful to avoid isolating it from the numerous kindred affections occurring in the lymphatic glands, the serous or mucous membranes. The latter class of tuberculous affections are less convenient for study than phthisis, because their symptoms are more obscure and their lesions more deeply seated, but are not less important for a complete knowledge of pathology.

Although in the majority of cases, tubercles arise without previous inflammation, or other local disorder, it is not always so. There are certain individuals presenting no sign of ill health, or of scrofulous diathesis, from hereditary causes, who, under some circumstances, are seized with acute inflammation, which is followed by a tuberculous deposit in the part affected. In these cases, tubercle seems to a certain extent to replace the purulent secretion, which is the usual product of inflammation. In other and more numerous cases, the inflammation which precedes tubercles, occurs in individuals who are already predisposed to their formation, and the acute inflammation is then merely the accidental cause of their development. This inflammation may be seated in the tissue which afterwards becomes tuberculous or in adjoining parts; thus, pneumonia, and still more frequently bronchitis may precede tuberculous formations; pleurisy is also an occasional exciting cause of phthisis, and in such cases tubercles are not necessarily found in the serous membrane itself.

Another mode of formation of tubercle occurs as a consequence of fever, especially the typhoid fever. In some cases it occurs under the form of very numerous gray granulations scattered throughout the lungs, or else it is infiltrated throughout their tissue. Both these

varieties are speedily fatal in a large proportion of cases. In some cases the more chronic form of phthisis is developed; it is then more frequent after the termination of the fever, than during its active period. A third form of pulmonary disease differing in some respects from phthisis, bronchitis, and lobular pneumonia may occur during the fever, and as soon as it has passed through its course, a cavity begins to form which is generally confined to the lower lobe of the lungs, but terminates in death, without obvious secretion of tubercle.

Other causes of sudden tuberculous disease are well known. Confinement to bed or even to a single apartment, depressing passions, insufficient supply of food, particular trades and occupations, all have an influence in determining the tuberculous affection. We already possess a mass of documents relative to these points, but we have still only a vague knowledge of the influence of climate in forming or retarding the progress of tubercles. The object of the French Academy is to supply this deficiency, and to obtain a sufficient number of well ascertained facts by the aid of numerous physicians scattered throughout various countries. By their united efforts a mass of documents may be procured in a comparatively short time, which the most untiring industry on the part of a single individual could never collect together.

We dare not hope that our knowledge of the influence of climate will become so accurate as to remove all doubts relative to the selection of particular situations for consumptive patients, but we may confidently anticipate that the situations which rather favour than retard the developement of phthisis, will become so well known, as to no longer remain amongst those which are recommended as the last hope of the feeble consumptive. We believe that the true solution of the tuberculous disease will at last be found, not in the influence of particular climates, occupations or situations in life, but in individual states, which are produced by many and various circumstances. We believe that researches into the influence of external circumstances in forming or in retarding tuberculous developement are most useful, but we do not imagine that they are at all sufficient to furnish the key to the difficult problem. That a solution will one day be reached, is our firm conviction, and then only can we be sure of our success in combating a disease which in the large majority of cases is now only relieved or protracted, but not cured.

*Instructions of the Royal Academy of Medicine of France for the study of Phthisis, with reference to different climates. Read on behalf of a Committee by M. Louis.**

The committee was appointed; and on its behalf, Dr. Louis presented the following report:

“The Academy of Medicine, after a long discussion as to the action of climate upon the developement and progress of phthisis, has perceived that its effects were much less clearly proven than might be supposed from the practice of the majority of physicians, and as there is no point in practical medicine of more importance, the Academy has determined to investigate it without delay.

“But this question, like all those which are offered in medicine, can only be decided by numerous and accurately observed facts: and as it relates to climate, these facts must be ascertained in various parts of the globe. The Academy should then apply to all physicians who, by their position, are enabled to collect together a sufficiently large number of facts. It has less hesitation in doing so because, although it requires considerable labour to attain the desired end, the results of these labours will remain the property of their authors, as the Academy can only collect and compare them together, and publish the general conclusions.

“At the same time that the Academy is asking for the assistance of both French and foreign physicians in resolving one of the most important questions of practical medicine, it was thought best to furnish them with a kind of explanation of principles, or some details as to the manner of effecting the task which is proposed, in order that both the objects proposed and the terms necessary to be used should be thoroughly understood.

“The first point to be fixed with precision is the meaning of the word *phthisis*. By this term the Academy, with most modern pathologists, means that affection which, with few exceptions, leads gradually to death from progressive emaciation, and is characterized anatomically, by productions or tumours developed in the pulmonary parenchyma, generally rounded, of a greenish-yellow colour, homogeneous and of a dull appearance, firm, difficult to break at first, but which at the end of a variable period become soft, empty into the bronchial tubes, and are succeeded by cavities of various dimensions; they are generally preceded by grayish semi-transparent granulations, which give rise to them, so that in some cases these granulations exist alone. Any other disease of the lungs or pleura which should cause emaciation and death, without being connected with the tuberculous lesion above described, is not considered by the Academy as a case of phthisis.

“As to the principal object, that is the solution of the question properly so

* These instructions were transmitted to the translator last summer by Dr. Louis, with the request that he would make them known in America. It was his original intention to have translated and published them in the November number of this Journal, but accidental circumstances have caused a delay in their publication.

called, it must be evident to every body that the influence of climate upon the development and progress of phthisis can scarcely show itself except in the following manner: either in rendering this disease more rare in one country than in another, or by accelerating or retarding its progress, or at the same time rendering the disease more slow and less frequent, either in the natives of the country, or in foreigners, all other things being equal, as age, sex, &c.

“The solution of the first problem, that is, the rarity or the frequency of phthisis, is evidently anatomical, and every where, if numerous autopsies can be made in the hospitals, materials for resolving it may be collected. It will be sufficient to determine in a certain number of dead bodies the proportion of those who were carried off by phthisis, or present tubercles in the lungs; provided, however, that the hospital where the facts are noted, should not be specially destined for the aged or for chronic diseases; for in that case, the results may be rigidly deduced, but at the same time be false.

“The same thing would occur if, from the rules of the hospital in which the observations were made, tuberculous patients were not admitted, for then tubercles would only occur as a complication, and an error equally grave with the preceding one, would arise.

“We might certainly restrict this part of the question to a brief description of the lungs, but that it may assist in answering the other queries, it will be necessary to add to this description, whenever practicable, the state of the digestive tube, especially of the larynx, of the œsophagus, and of the small intestine, the state of the mesenteric glands, of the trachea, and of the liver; finally the age, sex, and appearance of the skeleton.

“The second part of this question, the progress of the disease, comprehends two series of facts—one relative to subjects who die, and another relative to those who are cured, or whose disease is arrested in its progress. In both these classes of patients there is a circumstance which is both important and difficult to ascertain; that is, the beginning of the disease: it is important, because without it we cannot ascertain the duration of the disease with any precision; difficult, because it requires numerous questions directed towards this single point. The first answer of a patient to the question, how long have you been sick, is generally inexact; instead of limiting our inquiries to it, we must return to it again and again, ask the patients if, before the time which was fixed, they had become thin, if they had had pains in the chest, if they had spit blood; and, in the event of an affirmative answer to the last question, we must endeavour to ascertain approximately the quantity of blood expectorated in a given time, &c.

After the commencement of the affection is ascertained, we must inquire into all the symptoms which may characterize it at its origin, or after the patient has come under observation, consequently all the means of exploration must be carefully practiced.

We next ascertain if the progress of the disease has been continued or intermittent, or remittent, and what means have been used against it. This must also give rise to numerous and reiterated questions, for *exact answers cannot be obtained except at this price*. When the bodies of the dead are opened, we must not only briefly describe the lungs, but we must also, as already mentioned,

examine if the secondary lesions which in the climate of France seem exclusively, or almost exclusively, confined to consumptives, have occurred; if there be ulcerations of the larynx, of the trachea, of the small intestine, or if the liver be fatty. These lesions may not be equally frequent in all climates; and this difference, if it should occur, would indicate, as far as it extends, a difference in the progress of the disease.

If, instead of constantly ending fatally, the disease terminated in some cases by a restoration to health, it is not sufficient merely to state the fact, but it should be accompanied with many details, so that no doubt could exist as to its reality, if it had been well observed, and if an error has been committed, that it may be discovered. For what physician can affirm that he never commits errors of diagnosis, and who can expect to be believed on a simple assertion.

To the above-mentioned details, we must add those which relate to the sex, the age, the strength or weakness of constitution, to the occupation of the patients and to the time during which they had followed it, to the duration of their daily labour, to their food, to the several emotions which they had experienced; for without these details we should be in want of the necessary elements for studying in a proper manner, the influence of climate upon the development and progress of phthisis.

In order to facilitate the labour of analysis by the Academy, that is, the comparison of the numerous facts noted in the most various climates, the details relative to both the first and second part of the problem, should be placed in a tabular form. One table will refer to the variety or the frequency of the disease, and another to its progress. These tables should be divided into as many columns as there are distinct objects of inquiry; the tables numbered one and two are given as examples of what we mean, and to insure greater regularity.

After the study of patients, will come that of the climate, and especially of localities, which have often a more powerful influence than climate itself, upon the course and the development of diseases. It will be necessary to make known the degrees of latitude and longitude of the country, the mean temperature during a certain lapse of time, that of each month in the year during the same period, the mean quantity of rain falling during the year and in each month of the year, the winds, the abrupt changes in the atmosphere, the nature of the ground, whether low or elevated, the rivers, their direction, the quality of the water, the mountains and their height, the forests and their relative extent compared with that of the cultivated ground, the tempests, fogs, &c. These facts, like the preceding, should be arranged in the same number of columns, or if preferred, in the order indicated in table No. 3.

In the preceding statement, the Academy has only asked for those details which are believed to be absolutely necessary for solving the proposed problem, but it asks before every thing else, even before the number and variety of facts, for their *exactness*, without which the most rigorous conclusions would only lead to erroneous results.

In the opinion of the Academy, if we wish to arrive at rigorous and true results, the question should be studied as if for the first time, and as each of its members has given up his previous opinions, until the question should be

resolved in a more positive manner, it hopes that the physicians who may wish to take part in the proposed work will do so without preconceived notions, that they will *seek to learn and not to prove*, and that they will consider the opinions they may entertain relative to the influence of climate upon the development and progress of phthisis as *provisional*, until the analysis of the statistical tables forwarded to the Academy may furnish us with exact conclusions. The Academy also hopes that they will not delay the search after the facts necessary for the solution of a problem which is equally important to all parts of the civilized world, and can only be determined by the combined efforts of the physicians of all nations.

Read and adopted at the session of the 17th January, 1837.

PARISET, Perpetual Secretary."

TABLE No. I.

| | |
|-----------------------|--|
| Liver. | |
| Small Intestine. | |
| Œsophagus. | |
| Trachea. | |
| Larynx. | |
| Epiglottis. | |
| Lungs. | |
| Conformation of body. | |
| Temperament. | |
| Sex. | |
| Age. | |
| No. | |

TABLE No. II.

| | |
|--------------------------|--|
| Liver. | |
| Small Intestine. | |
| Œsophagus. | |
| Trachea. | |
| Larynx. | |
| Epiglottis. | |
| Lungs. | |
| Treatment. | |
| Progress. | |
| Symptoms at observation. | |
| Symptoms at beginning. | |
| Beginning and duration. | |
| Habits of life. | |
| Food. | |
| Occupation. | |
| Conformation. | |
| Temperament. | |
| Sex. | |
| Age. | |
| No. | |

TABLE No. III.

| | |
|---------------------------------------|--|
| Suddenness of changes of Temperature. | |
| Winds. | |
| Dwelling. | |
| Mean Temperature. | |
| Moisture. | |
| Rain. | |
| Rivers. | |
| Soil. | |
| Forests. | |
| Mountains. | |
| Latitude. | |
| Longitude. | |
| No. | |

ART. IX. *Cases and Observations.* By R. D. MUSSEY, M. D., Professor of Anatomy and Surgery in the Medical Institution at Dartmouth College, New Hampshire, and Professor of Surgery and Obstetrics in the College of Physicians and Surgeons of the Western District of the State of New York.

CASE I. *Extraordinary Case of Animal Electricity.*—Thousands recollect the remarkable and brilliant red northern light, which appeared on the evening of the 25th January, 1837. On that evening Mrs. B., a lady of about 30 years of age, residing in Grafton county, New Hampshire, while occupied with her friends in contemplating that extraordinary phenomenon, discovered that an electric spark passed from her fingers, elbows, or any other part of the limbs or body, when brought nearly in contact with conducting substances. The possession of this faculty was scarcely less surprising to herself than to her friends, whose incredulity on its announcement, was soon dissipated by a few snaps from her finger. On the following day the same power existed; and subsequently, more or less, for twelve or thirteen weeks. Its intensity gradually increased for four or five weeks, and from that, as its maximum point, it slowly declined, till early in May, when it was entirely lost, and has not since returned.

She was much annoyed with a spark passing as often as twice in a minute from her feet, when placed upon the hearth-plate of an iron stove; and in a dark place her hands, on being rubbed together, often exhibited brilliant electrical coruscations.

Animated conversation and moderate exercise appeared to promote the electrical accumulation. On taking a turn or two across the carpet, the intensity of the spark was evidently augmented. The state of the atmosphere, in regard to moisture and dryness, seemed to exert no influence upon this faculty. It was not so, however, with temperature. A low temperature enfeebled it, and at 25° F. it disappeared altogether; but was resuscitated by a due elevation of temperature, and at 70° or 80° its activity appeared to be at its maximum.

On some occasions a visible spark could be produced once in a second; and in a minute four strong sparks, each an inch and a half in length, were elicited.

Mrs. B. wore a silk dress at the time of the commencement of these phenomena, and during most of the period of their continuance; but, at the suggestion of her physician, this was exchanged for cotton and flannel dresses successively, without exerting the least apparent influence upon this extraordinary faculty.

Col. B., the husband of this lady, was absent at a remote part of the country, at the time of the electrical developement. On his return in April, she met him at the door, and playfully presenting her finger to his face, astonished him with her newly acquired power.

Mrs. B. is a lady of intelligence and worth; possesses a flow of spirits; and has a temperament somewhat sensitive, to which her sedentary habits may have contributed, as she has devoted a considerable time to books. She has been married about ten years; has had no child; but without much irregularity, has been visited with the periodical illness. Before marriage she was subject to dyspepsia, accompanied, more or less, with neuralgia. Since marriage she has enjoyed better health, although it has not been vigorous.

The foregoing statements may be relied on. The facts are notorious in the place of her residence. With her family, as a consulting physician, I have been acquainted for some years. I called upon her early in May; but the electrical phenomenon had wholly disappeared a short time before. She informed me that she thought her health was not quite as good during the electrical developement as it had been previously.

She, as well as her family friends, confirmed the facts above stated, for which I am primarily indebted to my intelligent friend Dr. W. Hosford, her physician, who resides in the same village, and who has taken a lively interest in her case.

CASE II. *Congenital Absence of the Meatus Auditorius Externus of both Ears, without much impairing the hearing.*—Mr. N. W. Goddard, æt. 27, of Windsor county, Vermont, bookseller, requested me in 1834, to examine his ears; at the same time remarking, that his hearing was not quite as quick as he could wish. The left auricle was smaller than the average size, and its several ridges and pits not quite perfectly developed. The right auricle was scarcely half as large as the others, and very imperfect in its form. In neither of them was there a vestige of an opening or passage of the external ear. There was not even a decided indentation, corresponding with the entrance of the ordinary orifice of the meatus externus, but the whole was sealed up, and made smooth and firm by common integument. From the best examination I could make, by moving the auricles from side to side, and attempting to depress the skin in the situation of the usual orifice, I came to the conclusion that there was probably nothing like an occult canal between the integuments and the tympanum.

The sense of hearing was too obtuse for low conversation, and yet

it was sufficiently good to enable him to prosecute his business without material inconvenience. He informed me that the ears, and the power of hearing, had been in the same state from his earliest recollection, and according to the assurances of his parents, from the first period of infancy. I made several experiments in this case, from which it appeared that an open or shut mouth and nose had no influence whatever upon the power of hearing. The experiments were repeated so as to satisfy all present, as well as Mr. G. himself, that he could hear with equal readiness when the lips and nose were closed, and pressed together by the fingers of assistants, as when both were wide open. I bent a probe to the proper angle, attempted to introduce it into the Eustachian tube; but although its extremity was arrested, as by a pit or fossa, I could not pass it as usual up towards the internal ear. When the probe in this situation was repeatedly pressed in the natural direction of the Eustachian tube, he complained of an uneasy sensation deep in the ear. From these ineffectual efforts to push the probe as far as usual, and from the hearing being nothing impaired by a firm closure of the lips and nose, I concluded that the Eustachian tube, if its guttural orifice existed, had no communication with the cavity of the tympanum.

The hearing was equally good upon the right and left side of the head, and a sound from behind was quite as readily appreciated as one coming from a position in front, or on either side. I covered the whole head with successive layers of cloth, and found the hearing to be decidedly obscured by the application of a single layer, and by each of the others in proportion. A few layers only were sufficient to deafen him to almost the loudest articulations which could be made. Covering the face while the ears were left exposed, evidently obscured the hearing, with the mouth and nostrils open or closed. When the ears were included in the covering, the difference, if any existed, was not very distinct. But covering the hairy scalp, except a small portion at the anterior and upper part, leaving the face and ears bare, depressed the hearing in a marked degree, much more than covering the face and ears, leaving out the scalp. These experiments were so many times repeated, as to leave, I think, no room for mistake. On speaking to him with one end of a stick in my mouth, while the other end was applied in succession to different parts of his head and face, I found that the part over the mastoid process conducted sound the most readily: and the parts corresponding with the upper two-thirds of the occipital, the mastoid plate of the temporal, and the posterior half of the parietal bones, transmitted the sounds more readily than the anterior half of the scalp, the forehead, temples, or any other part

of the face. I saw Mr. G. again in May, 1836, and found his hearing powers in the same state.

It is evident that in this case the integuments of the face and scalp are capable of receiving acoustic impressions, from the atmospheric waves or vibrations necessary to the production of sound, and of transmitting them to the organ of hearing. By what nerves distributed upon those parts, is this function accomplished? Mr. Swan, who, in a paper upon the physiology of the ear communicated to the Medico-Chirurgical Society of London in 1820, and recorded in the eleventh volume of the Society's Transactions, describes a case in many respects similar to the foregoing, suggests that the facial nerve or portio dura may assume the vicarious function of audition, taking the office of the auditory nerve. If the facial be chiefly or wholly a motor nerve, as physiologists at the present time seem disposed to believe, the extraordinary function of one of the special senses would be less readily attributed to it, than to the trigeminus, a considerable part of which belongs to common sensation, while another portion is appropriated to the immediate function of taste. In the case of Mr. G., however, the distribution of the facial nerve could not explain the quick susceptibility of nearly the whole scalp to auditory impressions. It can hardly admit of a doubt that those nerves derived from the spinal cord below the occipital hole, and reflected in profusion upon the scalp, are concerned in this uncommon function; while the branches of the fifth pair are probably the seat of the peculiar faculty upon the face. Is there any way of determining whether the power thus specially subservient to the function of hearing be naturally inherent in the nerves of the face and scalp? and if so, can a method be devised of eliciting its dormant energy, and turning it to account in cases of deafness connected with casual disease of the external meatus, or the tympanum?

CASE III. Successful Operation for Ovarian Disease.—In the summer of 1828, I was consulted in the case of Mrs. Sly, upwards of 40 years of age, of Ryegate, Vermont. She had a tumour in the abdomen, which extended from the hypogastrium to the left hypochondrium; it was elastic, giving a distinct sense of fluctuation to the touch, and could be very slightly moved from side to side. This tumour was discovered about two years before, and had increased considerably within the last year. Three or four months before I saw her, she was confined some time with symptoms of subacute inflammation in the abdomen, after which, as her physician assured me, the tumour was less movable, than it had previously been. For two or

three years her general health had been variable, marked by dyspepsia and occasional febrile attacks; and since her sickness in the spring, although she had been gradually improving, her health was far from being sound. The monthly illness, which had not been perfectly regular, did not appear to have been influenced by the growth of the tumour; and from the whole complexion and history of the case, it was inferrible that the swelling was a cyst connected with the left ovary.

The patient had been taught by her physician, to expect a cure from an operation, in which the tumour should be removed, and was somewhat disappointed on my expressing great doubt of the practicability of safely extracting it, on account of the extensive adhesions which probably existed. She was, however, assured, that an operation might be undertaken without serious danger, and prosecuted so far as to admit of the precise state of the case being ascertained, and that the sac, if not removable, might be opened, and possibly so much inflammation excited in it, as to cause an adhesion of its walls, and an ultimate removal of it by absorption. With these views of the case, the patient and her friends decided upon the operation. I left her with the injunction to live on farinaceous preparations and milk, and revisited her in about a fortnight to perform the operation.

It was a warm afternoon in July, the temperature of the atmosphere being upwards of 80° F. when the operation was undertaken. An incision was made through the integuments at the linea alba, from the umbilicus to the symphysis of the pubis. On the viscera being exposed, a sac appeared extending from the cavity of the pelvis, through the left iliac and lumbar regions, into the left hypochondrium. This sac was so large as to occupy a portion of the epigastric, the right iliac, and lumbar regions; but did not extend into the right hypochondrium. Most of its anterior surface was covered by the mesocolon, with which a firm adhesion was formed throughout the whole extent of their contact, and the transverse portion of the colon was in the lower part of the abdomen, passing from one iliac region to the other. The upper part of the sac was firmly fixed by adhesions so high in the left hypochondrium, as to render it difficult to decide precisely what parts were involved; probably, however, the spleen and splenic extremity of the stomach were implicated; but as handling the viscera caused the patient to complain, this point was not ascertained.

These extensive adhesions settled the question of removal of the tumour by dissection. All that could safely be attempted was, to discharge the fluid and take measures to inflame the interior surface

of the cyst. Accordingly, upon the median line, in one of the meshes of the beautifully injected plexus of mesocolic vessels, a puncture was made large enough to admit a catheter, by which the fluid, slightly turbid, and amounting to between four and five pints, was drained off. The opening was then enlarged, and a tent of twisted charpie introduced a little way into the sac, the other extremity being left to hang out externally. The lips of the wound were then brought together and secured by three stitches, which did not penetrate the peritoneum, and by adhesive strips, to which additional support was given by a compress and broad band around the body.

The patient was kept upon her back for several days, until the adhesions of the wound, which united by the first intention, were firm. She was rather restless the first night after the operation, and took a moderate anodyne dose; there were no troublesome symptoms afterwards worth naming. For several days a thin fluid dripped away through and around the charpie. After a week the fluid became turbid, and in a short time distinctly purulent. In three weeks the discharge was trifling, and the opening speedily closed. In a few weeks more not a vestige could be felt of the sac, which, at the place of puncture, at the time of the operation, was about a line in thickness.

In about a year from the operation, Mrs. S. was safely delivered of a son, her fourteenth and last child. I saw her in the summer of 1835, and learned from her, that since the birth of her child she had enjoyed pretty good health. The abdominal integuments between the navel and pubis were at this time thin and pouched, and she found it convenient to avail herself of a little mechanical support from a laced waistcoat. During the advanced period of her last gestation, as she assured me, she suffered much from the distension of the abdominal integuments; and although she wore a laced garment adapted to the protuberant form of the body, she was in daily fear, lest the attenuated skin should give way at the cicatrix of the incision. Her fears, however, were not realized.

The case of Mrs. S. is one of the few which admit of a radical cure from ovarian disease, by a surgical operation. The cases are still rarer in which the diseased part can be safely dissected out. In the great majority of instances, the disease consists in a fleshy growth united with one or more cysts, and the few specimens of the disease in the form of a single cyst may be regarded as exceptions to a general rule.

Almost without exception adhesions are formed between these tumours and the abdominal parietes or viscera, or both; and these being

generally too extensive to admit of a safe separation by dissection, the operation for *removal*, especially where the tumour is wholly or in part fleshy, can never be attempted with confidence of accomplishing the object; and when attempted, can rarely be completed, without subjecting the life of the patient to imminent hazard. To be sure, cases have been reported of successful removal of ovarian tumours, even where the disease was not merely cystic: but there is reason to believe that a large majority of operations instituted with a view to dissect out the disease, have failed, and been instrumental to the speedy death of the patient. I could cite four cases of this kind, and if proper, could designate the several operators, who thus gave themselves occasion to repent of their temerity.

It does not seem probable that inflammation and adhesion of the walls of an ovarian cyst, induced as in the foregoing case, would be followed by the absorption of a morbid, fleshy, or solid growth accompanying it: there might, however, be no impropriety in making the trial, in a case of a small fleshy tumour, united with a large sac, provided the patient, after being made fully to comprehend the object, should prefer it. Of a numerous list of cases of ovarian diseases, which have been presented since the foregoing operation, I have not found one which, as it appeared to me, would admit of an operation with the least prospect of cure. In conclusion, I will remark, that should another case offer itself like that of Mrs. S., I should proceed to open the abdominal parietes at the median line, for an extent sufficient to enable me to penetrate the sac under the direction of the eye. Let it be remembered, that in the above case, the transverse colon passed across the abdomen in front of the sac, and was immovably attached to it by adhesion, about midway from the navel to the pubis: of course the common operation of abdominal tapping would probably have been fatal.

CASE IV.—*Adhesion of the walls of the Vagina.*—In January, 1835, I was requested by my friend, Dr. L. A. Smith, of Newark, New Jersey, to visit Mrs. B., æt. 26, the wife of an intelligent mechanic, from Northampton, England, who had been six months in this country. For more than three years, that is, since the birth of her only child, she had not menstruated; and without intermission, during that period, she had experienced a difficulty, and much of the time had suffered great pain in passing the fæces and urine. At the recurrence of the monthly period, her pains were excruciating, so as to confine her to bed. After the birth of her child, she had a purulent discharge from the vagina for four or five weeks, the sequel of severe

and protracted labour, in which the head of the child lay imbedded in the vagina for three days. During her convalescence, notwithstanding the existence of this discharge, together with great soreness in the vagina, and difficulty in urination, her physician made no examination of the parts, but expressed to Mrs. B. the opinion that she had a stone in the bladder, and some day would be under the necessity of having it extracted. With this impression, soon after arriving in the United States, she put herself under the care of Dr. S., who, on investigating the case, ascertained that the walls of the vagina were adherent, and correctly judged that her severe and protracted sufferings were owing to this circumstance.

On examining the parts, I found only three-fourths of an inch of the vagina open, its walls thickened, the calibre small, and the cicatrix of adhesion very firm. By passing a finger into the rectum and a catheter into the bladder, it was ascertained that a tumour, yielding very slightly to pressure, occupied the upper half of the cavity of the pelvis, extending antero-posteriorly, so as to compress the rectum and the bladder. This readily explained the pain and difficulty attending the evacuation of those organs, and the fact of her seldom having had a motion of the bowels without an active cathartic. This tumour extended some distance above the brim of the pelvis.

After due preparation, by evacuating the rectum and bladder, the operation was performed. Assisted by Dr. S., I made a cautious dissection, with a narrow scalpel, from side to side, into the cicatrix, in a direction which I had previously decided upon, from an attentive consideration of the anterior and posterior extent of the tumour. Having pursued the dissection about an inch, I passed the instrument into a cavity, from which gushed a stream of thick black fluid. A considerable quantity of this being drained off, the opening was enlarged so as to admit of the easy passage of the finger. The uterine portion of the vagina and the cervix uteri had been so dilated, as to be scarcely distinguishable from each other in forming the common wall of a sac, which had been gradually enlarging for three years by the menstrual accumulation. The parts were cleansed with warm water, and a bougie, moistened with oil, left in the wound. Dr. Smith had the care of the patient afterwards.

In a letter from that gentleman the following March, viz: three months after the operation, he says,

“I write to inform you of the result of the operation for adherent vagina in the case of Mrs. B. The wound is now entirely healed, and the cicatrix is much more yielding than I expected. The finger can be passed very easily, and without pain, to the os tincæ. The bowels and bladder are easily evacu-

ated. She menstruates regularly, though she suffers more pain at such times than before the vagina became diseased. The strength is improving, and she has every prospect of a perfect restoration to health."

In a letter of December 10th, 1837, the same gentleman writes,

"Up to last fall and the beginning of winter, when she removed from town, Mrs. B. had good health: her menses appeared regularly and in the usual quantity, though she usually, at the period, suffered rather more pain than she did formerly. The last time I examined her by the touch, which was about a year after the operation, the passage was firmly contracted, admitting only the finger, and that with some pain. The uterus was entirely healthy, though she has not been pregnant, probably from not having been exposed."

With regard to the contracted state of the vagina thus described by Dr. S., I would remark that it might, in all probability, be dilated to almost any requisite extent, by the persevering use of bougies, joined with mucilaginous and unctuous applications, and possibly the extract of belladonna. Even should pregnancy take place, it is not improbable that nature would make such preparation of the parts as to admit of safe delivery.

CASE V. Arm and Shoulder-blade torn from the Body.—On the first of April, 1819, Albert Webster, a robust youth, of 16 years of age, had his left arm and shoulder-blade torn from his body in a cotton factory. On my arrival, two hours after the accident, I found him lying on his right side, and in place of his shoulder-blade, an oval-shaped wound, six inches in its vertical, and five in its horizontal diameter, covered with a material resembling the white of an egg, about one-fourth of an inch in thickness. The margin of the wound was more even and regular than I should have expected to be made by a forcible disruption of the skin. The collar-bone projected half an inch or more at the upper part, and a little below it was a coagulum as large as the point of the finger, alternately rising and retreating in conformity with the arterial pulsations.

There was no hemorrhage at the time; and I was informed that probably not more than a pint of blood had been lost. On inspecting the clothing and the place where the accident occurred, I was of opinion that all the blood discharged was less than a pint. Hanging from the wound were two large nerves, (without much doubt the meridian and the ulnar,) more than twenty inches long, which were still sensitive near the body, and the cutting of which at the surface of the wound, caused the patient to complain of a pain, which he referred to the hand of the injured side. The part of the large pectoral muscle which remained was contracted, forming a tumour, tender to the

touch, between the anterior edge of the wound and the sternum, while at the posterior edge the rhomboid muscle hung loose and insensible. The projecting portion of this muscle was cut away, and the edges of the wound approximated so as to cover the extremity of the clavicle, and meet; the integuments also were made to meet at the lower angle of the wound, but could not be brought together at the middle without rendering the skin too tense for safety. An uncovered space was therefore left, an inch and a half at the widest part. No ligature was applied to any vessel, nor were stitches employed in the wound; adhesive strips, a compass, and bandage constituted the dressings.

The patient, for the first two weeks, was kept exclusively upon farinaceous substances, prepared with water; afterwards some milk was added. The symptoms were mild; most of the wound united by adhesion. A small abscess under the clavicle was opened on the eighth day. In two weeks the wound was healed, except the part uncovered by integuments; upon this the skinning process was comparatively slow. In eight weeks, however, the wound was perfectly healed. A year after the injury, I saw the patient, and found a bony plate, apparently about three-fourths of an inch wide, taking such a course as to represent the marginal parts of the entire body of the scapula, firmly adherent to muscular parts beneath the skin. This triangular bony frame could be moved upward and downward, backward and forward, by a voluntary motion of the muscles attached to it.

Some of the circumstances connected with the accident were interesting. The young man was at work mending a broken band, which, being looped over his left arm, was carried, as he stooped to pick up something from the floor, under the main band, became entangled in it, and drew him up in a moment to the drum or cylinder, which carried all the bands of the carding machines in the room. His arm was drawn through the space between the drum and the ceiling, the fore-arm badly broken, probably at this time; his head and body were arrested by the ceiling and the drum, and for a few seconds the whole machinery was stopped.

From the account given by the agent of the factory, who was a spectator of the scene, and from what the patient himself recollected, it is probable, that at this juncture, the latissimus dorsi and pectoralis major muscles gave way, and that then making an effort with the other arm, and changing his position, the patient became more entangled with the bands, while the machinery started afresh, carrying him through the space between the drum and the ceiling. By

this time he was so involved in the bands that his body was secured fast to the drum, while his legs, as he passed under it, hung dangling. In this way, without apparent change of position, he made, as the agent who saw the whole assured me, about fifteen revolutions round the drum before the motion of the machinery could be effectually stopped by cutting off the water from the great wheel. At each of these revolutions, his legs fell with such force upon some top card pins, which were uncovered upon a carding-machine under him, that he was wounded with ten or a dozen holes, punched some of them deep into the legs, by these blunt iron pegs, two inches or more in length, and perhaps one-sixth of an inch in diameter. When he was disentangled from the bands, and taken down from the drum, he was able to stand upon his feet, and I was told that he actually walked a few steps. As his frock was opened, his arm with a clot of blood dropped upon the floor. I measured accurately the space between the drum or cylinder and the ceiling of the factory, through which he passed several times, as before stated, and found it to be scarcely *seven inches and a half*, although the ceiling was a plastered lathing, which probably might have yielded or bent a little as he passed. The wounds of the legs were a little troublesome for two or three days, but caused no serious symptoms; the soreness of them appeared to be much relieved by keeping the legs wrapped in dry batted cotton.

It was an object with me to be able to conjecture what amount of resistance the integuments and muscles could make, before the limb could be separated from the body; and as the whole machinery in free motion was arrested, and held in check for a few moments before these parts gave way, and as the whole force was probably for a short time thrown upon the large pectoral and latissimus dorsi muscles, it appeared probable that the power of these muscles, the thick axillary margin of them especially, might be pretty nearly tested. Accordingly, the agent, Mr. Green, kindly assisted me in an experiment to ascertain the weight requisite to arrest the full motion of the whole machinery of the mill. A few turns of a large rope were passed round the drum; to one end of it was appended a tierce containing weights, while the free end of the rope was held by an assistant. So long as the rope was loosed, its coils glided freely upon the revolving cylinder; the moment the free end of the rope was tightened, the tierce was raised from the floor. Weights were added in succession, till the tierce just balanced the whole power of the machinery. The weight was eight hundred and thirty-nine pounds. This I am disposed to regard, from the best history I could obtain of the accident, as an approximation to the force employed in the dismembering ope-

ration, and it seems probable that, for a short space of time, the muscles just named, forming the anterior and posterior margins of the axilla, sustained themselves against this immense weight.

CASE VI. *Exostosis of the Frontal Bone*.—P. Weeks, æt. 21, consulted me in September, 1837, for a tumour on his forehead, which extended from the nasal process of the frontal bone over the median line to the margin of the hairy scalp. This tumour perfectly hard and immovably attached to the body of the frontal bone, presented itself in the form of an obtuse ridge, its base an inch and a little more in its horizontal, and three inches in its vertical diameter, and its height about three quarters of an inch above the level of the surrounding surface. He remarked that *fourteen* years ago, when tilting upon a board, he fell with his forehead upon a stone; that the wound at the time was slight and soon healed, but that five years afterwards, viz: *nine* years ago, the commencement of the present tumour was observable. Within the last year and a half, he assured me that its enlargement had been very manifest. From its slow growth, its hardness and the absence of pain or soreness, and of cerebral irritation, I was induced to regard it as simple exostosis, and advised its removal.

In October he returned and submitted to the operation. The integuments were divided along its summit and dissected from its sides and base, and a groove cut with a Hey's saw around its base; I then introduced a chisel into the groove, hoping to strike off the whole tumour by a few strokes of a small lignum vitæ mallet an inch and a half in diameter. This I found myself unable to do; the tumour was nearly as solid and hard as ivory. By carrying the chisel twice or three times round the base, and sinking it deeper and deeper by numerous and smart blows of the mallet, I at length succeeded in splitting off most of the tumour in a block. The remaining irregularities were easily chipped away; and shavings of this bony substance which had nearly the compactness and solidity of ivory, were removed in succession by light taps of the mallet, and a sharp cabinet-maker's chisel, till the whole was reduced to the level of the surrounding surface, and was almost as smooth as the natural bone. The integuments were brought together over this surface, and secured by adhesive strips, and the wound was entirely healed in eight days. I find by examining the patient several times since, that the integuments glide freely over the chiselled surface, except along the line of the incision, where the cicatrix adheres so as to admit only of very slight motion.

I have introduced this case partly on account of the extreme hard-

ness and density of the morbid growth, approaching very nearly to that of the most compact ivory, a form of exostosis, which, I presume, must be very rare; and partly with a view to recommend the chisel and mallet as altogether the most useful instruments I have employed in removing bony excrescences. In cases where the pedicle of the tumour is circular and not more than three-quarters of an inch in diameter, and the texture not very compact, the whole mass may be struck off at a single blow.

In a case a few years since,* of exostosis springing from the axillary side of the os humeri near the head,—with tuberos prolongations which embraced more than half of the circumference of the bone, and with one of its protuberances so extensive as to compress the axillary vessels and nerves even to numbness, and an obvious obstruction of the circulation,—on the arm being raised to the horizontal position, I found the mallet and chisel the only efficient instruments I could employ. No kind of saw I have ever seen could have enabled me to accomplish the object, except imperfectly, and at the same time with aggravated and protracted suffering for the patient.

In the hospital of La Charité, in Paris, I saw the surgeon of that institution remove an exostosis rather less than a hen's egg from beneath the deltoid muscle. Instead of dividing the soft parts over the middle of the tumour, turning them aside out of the way, exposing the whole excrescence to view, striking it off with a few strokes of the chisel and mallet, and occupying but a few moments in the essential part of the operation; he made an incision on each side of the tumour, leaving a segment of the skin and muscle resting upon it; then with the narrow blade of a bow frame saw introduced through the incisions, he proceeded to saw away the tumour. This he at last accomplished after a slow and interrupted operation, accompanied with an agony on the part of the patient, such as I do not remember to have witnessed in any other surgical operation. The suffering continued for some time after the patient was carried to his bed, as indicated by his incessant cries till I left the hospital. This pain may doubtless be explained by a reference to the ordinary course of the circumflex nerve, and its necessary proximity to that part of the tumour which was subjected to the blindfold movement of the teeth of the saw.

* The patient was Dr. Cressy, of Essex county, Massachusetts. The operation was performed nine or ten years ago, and nothing of the disease had reappeared two years since.

CASE VII. *Removal by dissection of the entire Shoulder-blade and Collar Bone.*—Nineteen years ago, Mr. Horace Wheeler, then æt. 27, from Randolph, Vermont, consulted me for a bony tumour larger than a hen's egg, involving nearly the whole length of the metacarpal bone of the thumb, and another somewhat less, implicating the distal half of the metacarpal bone of the fore-finger, both upon the right hand. These tumours I removed by disarticulating the metacarpal bone of the thumb from the trapezium, and by sawing that of the fore-finger just below the insertions of its carpal, flexor, and extensor muscles. The wound healed kindly, and there was no appearance afterwards of disease upon any part of the hand.

About two years after this operation, pains were occasionally felt in the forearm, and sometimes extended to the upper arm. These pains, which were denominated rheumatic, continued more or less for eleven years. The last two or three years of this period, as nearly as Mr. W. can recollect, the pain was fixed in the upper part of the arm, and during the last year, the upper half of the arm and the soft parts about the shoulder joint underwent an enlargement so considerable, that the diameter of the limb just below the articulation was about twice the natural size; the integuments were much firmer than natural, and the slightest possible passive motion only, could be given to the joint. During the last two years and upwards, the pain in the arm was most severe at night, and through the cold season especially; the patient could seldom lie in bed, but found some relief and obtained at intervals a short nap, by occupying his chair through the night.

Not in the least relieved under the variety of prescriptions made by several practitioners, and worn down and disheartened by almost incessant pain, he consulted me in the autumn of 1831; and on the 3d of November of that year, that is, about *thirteen* years after the first operation, I amputated the arm at the shoulder joint. The operation was somewhat embarrassed by the induration of the soft parts, and in consequence of their exalted sensibility was very painful. The disease appeared not to have extended to the scapula, the glenoid cavity looking healthy; but the soft parts beneath the acromial half of the clavicle and around the neck of the scapula were a good deal thickened, and the apprehension was expressed to the patient, that, although the wound might heal, the disease might reappear in the neighbourhood. The wound healed readily, and the parts appeared sound; but the ensuing February the stump was attacked by inflammation, terminating in abscess, and in the following August another

abscess discharged spontaneously, and was healed in three weeks. From that time no abscess or ulceration has appeared upon the stump.

After this, Mr. W.'s general health was pretty good, never high, but such as to enable him to attend to some little business, and superintend the concerns of his family, until about the first of October, 1836, *five years* after the amputation. At that time, a dull pain was felt in the shoulder, and from that period the pain increased, fluctuating at intervals, sometimes dull and heavy, sometimes lancinating. The parts about the shoulder began to swell soon after the attack of pain, and like the pain, increased through the ensuing year. Late in the summer, (1837,) Mr. W. consulted me again, but discovered some reluctance and dread at the idea of the remedy I suggested, as the only means, *possibly* of effecting a cure, *probably* only of prolonging life a few years; namely, dissecting away the tumour together with the shoulder blade and collar bone, both of which appeared to be invaded by disease. He went home and put himself under the regimen of a quack steam doctor, who promised to disperse the tumour in a short time. Under the treatment instituted the pain and swelling increased so rapidly that Mr. W., of his own accord, soon abandoned the course, and made up his mind for the operation.

After a preparation of four or five weeks, living chiefly on farinaceous food, with a moderate proportion of milk, he submitted to the operation on the 28th of September, 1837, about six years after the amputation. At this time the tumour was round and prominent, measuring horizontally, over the summit from the anterior to the posterior margin of its base, *fourteen* inches, and vertically from the upper to the lower margin of its base, *ten* inches. A part of the surface, but slightly discoloured, was exquisitely sensitive on pressure; the integuments were tense, thin, and glossy, although they had not yet ulcerated.

An early step in the operation, which was performed in presence of several medical gentlemen, and the autumnal class, consisted in dissecting away the integuments from the clavicle, disjoining it from the sternum, elevating its sternal extremity, and relieving it from the subclavian muscle so as to admit of the finger of an assistant being passed under it to compress the subclavian artery. The subsequent steps of the operation need not all be detailed, as they consisted chiefly in plain, *coarse*, and sometimes rapid dissection. The operation was borne with but very little complaint, and on the removal of the whole mass, the patient appeared comfortable.

The first object was to apply a ligature to the subclavian artery. This vessel was seized and drawn out for that purpose, and just as the ligature was fixed upon it, a slight gurgling noise was heard, and an air

bubble was seen by my friend and colleague Dr. Oliver, as well as by Dr. Hoit and others, in the mouth of the subclavian vein, which must have been divided not far from its union with the jugular. A finger was immediately placed upon the open extremity of this vessel. At this juncture the patient appeared to be struggling under some new and strong impression. He uttered a low groan, his eyes were rolled upwards and fixed, his face and neck were bedewed with a cold sweat, the pulse in the neck, wrist, and heart, was imperceptible; consciousness was gone, and for eight or ten minutes by estimation, all that remained of the visible actions of life was a feeble, slow, abdominal respiratory movement, recurring at very long intervals. Ammonia and camphor were applied to the nostrils and tongue, but without apparent effect. At length the respiration became gradually more natural, the pulse was faintly perceptible, and slowly increased in distinctness, the eyes at last moved, and the patient waked up as from death. The extensive flaps of the wound were immediately put in place and secured by stitches, adhesive strips, compress and roller, and in half an hour the patient was very comfortable.

From that time there was almost no pain, and the immense wound, with flaps of seven or eight inches in extent, united by adhesion, and became consolidated and sound, *literally* without the formation of a *teaspoonful* of pus. There were a few drops only around the ligatures. In less than three weeks, the patient was dismissed and rode home in a stage-coach, between thirty and forty miles, and remained sound and well in November.

The alarming swoon into which Mr. W. fell at the time of the operation, must have been owing, I believe, to the introduction of air into the veins. The symptoms were much like those described by M. Amussat, as having recently taken place in a patient upon his operating table. A very little addition to its disturbing influence, it should seem, must have extinguished life. The uncommon exemption from pain after the operation, and the kind healing of the entire wound without suppuration, I am disposed to attribute to the circumstance of the patient being well prepared for the operation, taking no anodyne or narcotic before or after the operation, and living *exclusively* upon gruel the first ten days, and upon the same thing with the addition of mush and rice, with a small allowance of milk, afterwards during his stay at Hanover.

Here I will remark, that I have had an opportunity of witnessing the effects of severe operations upon patients in the habitual use of opium, and upon those not in the *habit* of taking it, but who took large doses to 'support them' under the operation, and I can have no doubt

that the latter class of patients suffer more pain during the operation, and are unspeakably more uncomfortable for several hours afterwards, than those who take none. Indeed ought not this result to be expected, when the nervous system is compelled to grapple with the influence of a powerful narcotic, in addition to the shock of an operation? Within the last two years I have seen the female breast removed after the lady had been prepared by taking two hundred drops of laudanum. For some hours after, her respiration was greatly agitated, and her sufferings were unusually severe from pain and prostration. As for those in the habitual use of opium, their sufferings, subsequently to a grave operation, are often most intense. I amputated the thigh of a patient who had used opium daily for several years. Soon after the wound was dressed, the pain became acute and increased to a frightful extent. He took an incredible quantity of opium in substance or solution, and it was not until after the lapse of fifteen or sixteen hours, that he was in any considerable degree relieved from his agony. During the healing of the wound, which was slow, he had a great deal of pain, for which he continued to take opium. He was not without pain a day, (as I think he afterwards assured me,) for two months, and did not gain an entire exemption from it until he laid aside the opium altogether, and invigorated his system by a long journey. I have recently performed two amputations of the leg for patients who had taken a considerable quantity of opium daily, the one for two, the other for three months. Both patients suffered intensely in the stump for a long time after the dressings were applied. The patient, a female upwards of sixty years of age, who had taken opium for three months, had the operation performed between eight and nine o'clock in the evening of the 10th of November, 1837. She suffered indescribably through the whole night, and although sulphate of morphia was administered in astonishing doses, so as to prostrate the strength to an alarming degree, and give an idiotic expression to the countenance the following morning, she was still roused to shrieking every few minutes by the severity of the pain. Dr. M'Gregory, the gentleman who had the care of this patient, writes me under date of December 16, 1837,

"Mrs. K. yet lives, but in a low and languishing state. Spasms almost insupportable continued after the amputation of the limb more than a week, after which they gradually diminished, and for a few of the last days they are hardly to be noticed. But pain of the stump yet remains of the severest kind, attended for the last two weeks with emaciation and mental alienation. She probably cannot survive more than a short time. No rest can be procured, unless by morphine; she has been obliged to increase rather than diminish the quantity."

He further remarks, that no part of the wound healed by the first intention, and that there is still a suppurating surface of considerable extent, with an unhealthy discharge. This is by no means remarkable, considering the deeply narcotized state of the constitution ever since the operation.

But to return to the case of Mr. W. The tumour connected with the shoulder blade and collar bone, when opened was found to contain a quantity of thick coloured or glue-like fluid, covered by a cartilaginous mass, in which were small amorphous deposits of bone. A part of the clavicle, and more than three-quarters of the body of the scapula, with its spine, acromion, and coracoid process, exhibit the disease by a degeneration, more or less, of the natural tissue, presenting a coarse spongy texture, with, at some parts, an exuberant growth of bony vegetations.

The following description is from my friend Dr. N. Worcester, who had the care of macerating and cleaning the bones.

“When I cleaned the bones after maceration, I found the jelly-like matter appeared every where in contact with the bony surface, and on the costal side of the scapula appeared to have burrowed under the periosteum, and wherever it existed the bone has taken on the spongy appearance; and where the periosteum was united with the bone, the last appears healthy. I found too, after the bone had been macerated, that what formed the other part of the cavity, which was not bone containing this matter, became hard, and most resembled cartilage, and was attached to the sound bone. Was this thickened periosteum?”

The appearances were similar upon the metacarpal bone of the thumb, and upon the os humeri. This last bone is diseased in its entire diameter and upper half of its length. The whole substance of the bone resembles very coarse sponge, and from the lower point of the diseased part it is regularly enlarged upward to the articulation, presenting a spongy cone with a rounded base, which is three inches and an eighth in diameter, that is, at the head of the bone. The articular surface of the head is still smooth, and remains in the form of a thin convex plate, loosely adherent to the coarse open tissue of the degenerated mass.

The patient is on the look out for another visit from his disease; but should his apprehensions be realized, he has certainly no means of determining what part will be selected for its next location.

CASE VIII. Operation for Enlarged Tongue.—John E. Hatch, æt. 13 years, was brought to me on the 13th of October, 1837, with hypertrophy of the tongue. His friends asserted, that at the time of

birth his tongue was above the ordinary size; and that at the age of nine months it began to hang out at the mouth.

By accurate admeasurement of the tongue, I found it to present the following dimensions.

From the margin of the upper lip, over the anterior and convex surface of the tongue to its tip, *five and a half inches*. From the same point upon the tip of the tongue to the lower lip, *three inches*. Largest lateral diameter, *two inches and three-quarters*. Largest vertical diameter, *two and a half inches*. Circumference at the largest part, *eight inches*. The anterior part of the lower jaw, during the progressive stages of its growth, had been dragged downwards, so that when the posterior grinders in the upper and lower jaw were in contact, the incisor teeth, projecting almost horizontally, were an inch and a half asunder. In the ordinary state of the mouth, the tongue where it emerged from the teeth and lips, was two inches in its vertical diameter; in fact, at this point, it was almost an exact cylinder, being flattened a little above and below, when the back teeth were brought together. From the great extension of the lower jaw, the bicuspid, cuspid, and incisor teeth were thrown at great distances from each other, and had such an incrustation of tartar, that the cuspid and incisor teeth were about three times their natural diameter. In the ordinary state of the mouth no space existed between the upper lip and tongue, but this frightful organ of speech looked like an immense bougie thrust into the mouth, for the purpose of dilating it to the last extent.

The boy was under size; had a sallow, downcast look; and has never, as his friends say, had very high health. He could articulate many words intelligibly; wore a cloth screen over the tongue; and had a perpetual dribbling of saliva from the mouth. He is said to have enjoyed his pastimes with his playmates, and has been frequently observed in winter sliding upon the ice, with an icicle hanging to his tongue.

In the operation, which was performed after a few days preparation, I chose the plan recommended by Dr. Thomas Harris of Philadelphia. The tongue was first dissected up from the floor of the mouth about three-fourths of an inch; then a sharp-pointed bistoury was plunged through it from below upwards, a little outside of the median line, and carried forward and outward through its lateral margin; the vessels were then tied, and after the other side of the organ was treated in the same way, the narrow isthmus remaining was separated by a scalpel, and the portions of the fork brought together and secured by stitches. The wound healed kindly in a few days.

The removal of the posterior grinders to promote a partial approxi-

mation of the jaws, I deferred till the tongue was healed; but an entire elevation of the lower jaw to its proper level, must be a work of time. This, it may be hoped, will ultimately be accomplished, under the efforts of nature, the tendency of which is to bring wrong things right, to which aid may, perhaps, be given by a bandage long worn, including the chin and the vertex of the head. In three weeks the tongue had lost from a third to half an inch in its vertical diameter; it is still, however, too thick and clumsy, although the power of articulation has been improved by the operation. If in the course of six or eight months, the tongue should not be considerably diminished in its vertical diameter, it is my purpose to remove from it a horizontal wedge-shaped segment, in order to reduce it to convenient dimensions.

CASE IX. *Case of Apparently Malignant Disease.*—In Vol. XI. of the New England Medical Journal, published at Boston, I reported a case of encephaloid or medullary tumour, for which I operated in February, 1822. The patient was Dr. Heaton, æt. 51; he discovered the tumour about three months before the operation, of the size of a filbert, or a little larger, just below the left angle of the jaw. The growth of this tumour was so rapid as to have acquired the size of the human fist, in the short period just named. At one point of the tumour there was a prominence which had a pulpy feel; and as the integuments covering this part were thinner and more tense than elsewhere, it was deemed probable that the tumour would, ere long, throw out at this place an intractable fungus. These suspicious appearances, coupled with the rapid progress of the disease, presented an unfavourable prognosis, and it was distinctly stated to the patient, that although an operation might not improbably prolong life, it could hardly be supposed that there was more than one chance in a hundred for a cure. He determined however to submit to the operation, remarking, that if there was one chance in a hundred, he would have it.

As the tumour was deeply imbedded in the neck, the operation was commenced by applying a ligature to the primitive carotid, and then prosecuted by careful dissection till all the diseased mass was removed. The degeneration was confined to the soft parts, although it had been feared that the transverse processes of some of the cervical vertebræ, as well as the hyoid bone, were implicated; the posterior part, or horn of the last named bone, however, with its appropriate muscles projected some way into the cavity made by the removal of the tumour, a portion of which had insinuated itself so far within as partially to enclose the fork of the carotids, as well as some of the branches of the external division of that vessel. The wound healed readily; and the patient,

who had been very temperate in his habits, still lives, enjoying good health, without having had the least indication of the return of the disease. My object in introducing this case here is, to adduce one example of what may now be presumed to be a radical cure of an encephaloid tumour; for I have never in my life seen a more perfectly cerebriiform or medullary texture in a morbid growth than in some parts of this tumour.

CASE X. Ligation of both Primitive Carotids.—To those gentlemen of the profession who felt an interest in the case of J. Pattee, recorded in Vol. V. p. 316, (Feb. 1830,) of this Journal, it may not be unwelcome to learn the sequel. The case was one of a large nævus, of five inches diameter, and two inches height, upon the vertex of the head, which had commenced about two years before, and which, slowly increasing, had bled repeatedly within the last six months, once to the amount of two quarts, as estimated by his physician.

In the autumn of 1827, (the patient being then twenty years of age,) I tied the left, and on the twelfth day after, the right, primitive carotid artery, and followed this operation by the use of an alum lotion, joined with as much permanent compression as the patient could bear, hoping by these means to promote an absorption of the tumour. In four weeks it was reduced by estimation to one-third of its original volume: at this time it appeared to be stationary, but it soon after exhibited a slight pulsatory movement, which, together with the volume of the tumour, rapidly increasing, I proceeded to dissect out the whole mass six weeks after applying a ligature to the second carotid. Notwithstanding the application of about forty ligatures in encircling, step by step, with an incision at the base of the tumour, before dissecting it away, blood, to the amount of nearly two quarts, was lost in the operation. The cicatrix of this extensive wound was tender for some months, and occasionally broke away; but after the lapse of a year, it was firm, and has never since ulcerated, and although it produces no hair, it is now only about one-half of its original diameter.

On the application of a ligature to the second carotid, the patient, although his face was distinctly paler than before, exhibited no signs of a deficient supply of blood to the brain, but walked down two flights of stairs from the operating room, and rode to his lodgings, nearly half a mile, without inconvenience. Most of the time since his recovery, from the operation of removing the tumour, he has enjoyed very good health. Occasionally he has had symptoms of cerebral plethora, indicated by pain or a sense of fulness in the head, and a congestion of

the vessels of the conjunctiva, from which important relief or a speedy cure has been gained by a single bleeding. With the exception of about one year, he has been a hired labourer in my family, since his convalescence from the last operation; and by his intelligence, activity, power of endurance, and fidelity, secures to himself as high wages as any man in the county is able to command.

Fairfield, N. Y., December, 1837.

REVIEWS.

ART. X. *Essai sur la Philosophie Médicale et sur les Généralités de la Clinique Médicale, précédé d'un Résumé Philosophique des principaux Progrès de la Médecine, et suivi d'un parallèle des résultats de la Formule des Saignées coup sur coup avec ceux de l'ancienne méthode, dans le Traitement des Phlegmasies Aigues.* Par J. BOUILLAUD, Professeur de Clinique Médicale à la Faculté de Médecine de Paris. Paris, 1836.

An Essay on Medical Philosophy, and on the Generalities of Clinical Medicine, &c. By J. BOUILLAUD, &c.

The object of the author in the above work, is "to impress upon the study of medicine that character of *precision* which is absolutely essential to all true science, and to give to it the direction generally followed in the physical sciences properly so called." When we consider the unsettled state of medical opinion, the conflicting theories and hypotheses which are afloat, the advances which have been made of late years in many departments, and the active spirit of research and observation so evidently characteristic of many minds at the present day, it is manifest that an investigation of the principles upon which those researches should be conducted, is of the highest importance. These very principles, too, are the subject of much difference of opinion at the present time, when the loosest generalization and the most narrow-minded adherence to the facts which are directly received by the senses, equally find their advocates. We participate then in the sentiment of our author, that a treatise on medical philosophy is a great desideratum in medical literature,—one which our age is called upon to supply. The present work is, as stated in the title page, a mere essay towards this, the author not pretending to any thing more than to take a general view of the prominent points connected with the subject, leaving to future writers the task of investigating them more in detail. He laments the unfortunate destiny which is reserved for every work of this kind, a destiny resulting partly from the exciting nature of the subject, and partly from the personal questions which are almost necessarily involved when it is freely discussed. That this is true, as regards the French capital, we have no doubt. There medical men are divided into coteries, whose members are held together by a more or less perfect similarity of views upon certain great and leading questions. Each of these has its presiding divinity, who is, before the world, the responsible representative of its principles. The latter being attacked, the former is at once in arms; the dignity of the presiding divinity has been insulted. Rancorous and personal war-

fare follows, in which angry feeling, pride and a regard for true principles are variously blended. Remote, however, as we are in this country from the arena in which the combatants are engaged, we can look on dispassionately, and examine with calmness the principles involved. "Generous spirits," says our author, "have, in medicine as elsewhere, hoisted the standard of conciliation. But how can we conciliate for any length of time principles which are essentially opposite." This is most certainly true of the principles but not of the disputants. A just and philosophic diffidence of our own opinion, and a proper conception of what is due to the feelings and views of others, would, no doubt, if acted upon, prevent those hostile feelings arising from mere differences of opinion. But as it is easier to preach than to practice, we will not pursue the subject farther.

Prof. Bouillaud fully admits that medicine is a science of observation, and that a portion of its phenomena are to be investigated in precisely the same way as those of natural philosophy and chemistry; that is, that we are to observe them to determine their laws, and from these endeavour to arrive at a knowledge of the forces which govern them. With reference to another portion of phenomena, however, those of animal life, or the life of relation, he remarks that we become acquainted with them in ourselves through the medium of internal observation or consciousness, and that in studying them in others we are obliged to call in the assistance of the various modes of expression, and of interrogation. He might have added, too, that even with reference to the first class of phenomena, or those which strictly fall under the cognisance of the external senses, we are often obliged to depend upon the testimony of others, mostly of our patients. Now, the value of this testimony depends upon the more or less correct exercise on their part of memory, internal consciousness and sensation, so that it is hence evident at the outset, how much more difficult it is in medicine to arrive at a knowledge of individual facts, than in the other branches of physical science.

The work is divided into four parts. The first contains an outline of the history of medicine; the second, the principles of medical philosophy; the third, general remarks in reference to clinical medicine; and the fourth, a statistical comparison between the treatment of acute inflammation adopted by the author and that generally in use.

In the first part, the author gives a very slight sketch of some of the prominent parts of medical history, and especially of the fundamental principles of the different schools which successively exerted their sway over medical opinion and practice, from the earliest period up to the time of Bichat and Pinel. To the former writer belongs the credit of having established the science of general anatomy; and his views in relation to physiology and pathology are examined somewhat in detail. These are based upon the doctrine of Stahl, who attributed all vital phenomena to a single force which he called the soul. Bichat, however, disregarding the idea of one general principle, endeavours to analyze the vital properties, and finally arrives at the conclusion that

all vital phenomena are owing to different forms of sensibility and contractility. Prof. Bouillaud, whilst awarding to him the credit of having decidedly advanced the doctrine of vitalism, as professed by Stahl, accuses him of having fallen into many errors, and especially of having entirely lost sight of chemical and mechanical forces in the analysis which he has made of those which govern the phenomena of organized bodies. There is doubtless some truth in this reproach, but it is perhaps exaggerated; because the properties of unorganized matter play but a secondary part, and are, strictly speaking, accessory in the production of vital phenomena.

The school of Pinel is next spoken of. The critical remarks of Prof. B. upon the writings of this eminent man have reference chiefly to his doctrine of the essentiality of fevers, in which, however, he is inclined to think that Pinel himself was not a firm believer. He even goes so far as to assert, upon the authority of Rostan, that Pinel was induced to treat of fevers in this way by the advice of his bookseller, who inspired him with fear that his book would be unsuccessful, and that he would incur the hatred of his compatriots should he adopt a different plan. That such considerations could have materially influenced the mind of such a man as Pinel, whose work for a long time exercised a powerful influence upon medical opinion, and which went through six editions in twenty years, seems wholly improbable. Besides, his real views must have been known to some of his medical brethren, and had he dared to publish opinions opposed to those which he really entertained, he must have incurred their contempt, and laid himself open, during his life time, to accusations which no one, we believe, ever preferred against him. Notwithstanding the insinuation just noticed, our author avows that his *Nosographie Philosophique* is the most beautiful monument which had at that time been raised to medical science, and that its author was worthy of being proclaimed the legislator and prince of the medical era in which he lived, as well on account of the nobleness of his character as the extent of his philosophical views, the depth of his genius as an observer, &c. The eulogium and the insinuation seem to be irreconcilable, and we cannot help thinking that Prof. Bouillaud, in the height of his enthusiasm for the doctrine of the non-essentiality of fevers, has been betrayed into injustice in reference to one of its firmest opposers.

The decline of the system of Pinel is next noticed. Of the works published in the early part of this century, which militated most against his doctrines, and especially his doctrine of fevers, that of Prost was one of the most important. This physician devoted himself with untiring industry to the investigation of the organic lesions which occur in different diseases, and especially those which are found in the mucous membrane of the intestines. He announced the doctrine, that the mucous membrane of the alimentary canal plays a most important part in the production of the phenomena of certain idiopathic fevers. He even attributed these to the inflammation of this membrane as a cause, and went so far as to state that in ataxic fevers, the brain was not really the seat of the disorder, but, on the contrary,

the mucous lining of the intestines, which was in a state of inflammation. Prof. Bouillaud says, that Prost's work was the commencement of the revolution (that of Broussais) which ten years later was to destroy the whole edifice of medicine. The work of Petit and Serres, published in 1813, also tended to show that certain alterations of the mucous lining of the intestines were the cause of a fever which they called entero-mesenteric, and which they thought was distinct from the ataxic and adynamic fevers of Pinel. The doctrine of the essential nature of fevers at that time in vogue was attacked by other writers also, and finally, in 1816, appeared the *examen* of M. Broussais, a writer whom our author terms the medical Messiah who was to accomplish the regeneration of our science. He gives us a sketch of some of the prominent doctrines of this celebrated man, and makes numerous extracts from his works. We shall notice cursorily the most striking features presented.

Broussais reproaches his predecessors, and especially Pinel, with having distributed arbitrarily the external signs of the affections of our organs into a number of groups, which were pure abstractions, under the name of diseases, and which do not represent the condition of the suffering organs. This was undoubtedly just as regards fevers, and perhaps some other affections; for Pinel divided the former into five groups, which are now known to constitute one disease, viz: typhoid fever. Few, we imagine, would be disposed to deny the propriety of so classifying diseases, as that the various groups of symptoms should, severally, be the representatives of a morbid state, of which one uniform lesion constitutes the principal element. But if it should be asserted that a certain train of deranged functions of an organ are always indicative of a uniform morbid state of it, this, though perhaps true as an abstract proposition, yet, when applied to the investigation of disease, it is calculated to lead into gross errors. It does so because when the disordered functions of an organ are viewed separately, and to a certain extent independently of the whole train of morbid phenomena constituting what we commonly call a disease, they cannot, in many cases, be made with any certainty the interpreters of the condition of the organ to which they belong. Thus, for instance, in typhoid fever some of the symptoms referrible to the brain are occasionally of such a character as would lead any one to suppose that that organ was the seat of acute inflammation, provided that he were not aware of the nature of the principal affection. We recollect a most remarkable instance of this kind in the wards of M. Andral, in which the delirium, convulsion, dilatation of the pupil, &c. would naturally have led to the supposition of inflammation and effusion on the brain; and yet, upon dissection, the latter organ was found perfectly healthy, whilst the glands of Peyer presented the usual alterations. How would it have been possible to have properly interpreted the above symptoms, unless we had regarded them not merely as connected with the organ to which they physiologically belonged, but also with the disease of which they formed a part.

Whether we view the condition of the brain in the above instance

as the result of sympathy, or the direct effect of an altered condition of the blood, is altogether unimportant; for in either case it seems to us perfectly clear that the symptoms spoken of could never be properly appreciated, except in connexion with the *disease*, the entity typhoid fever, of which the condition of the brain giving rise to them is one of the elements. Broussais, it is true, regards the cerebral symptoms of the disease as indicating inflammation of that organ; but that this is an error, is now incontestably proved, because in the immense majority of cases, post-mortem examination gives no evidence of inflammation.

Mr. Bouillaud continues:

"The point on which the whole system of Broussais in some sort turns, his fundamental principle, &c. is, that medicine should be based on anatomy and physiology."—p. 73.

The correctness of this proposition we shall not undertake at present to examine. We would merely observe that our knowledge of the mechanism of the healthy vital actions, especially the mollecular actions, is as yet too imperfect for physiology to be constituted the basis of the fabric of medicine.

Our author proceeding in his analysis of the new doctrine makes numerous extracts from the writings of its founder, for the purpose of setting forth his views in relation to fevers and organic lesions.

"The denial of the essentiality of fevers and their localization in the digestive tube, under the title of *acute inflammation* of the mucous or follicular membrane of the apparatus, is undoubtedly one of the most capital propositions of the new doctrine."—p. 74.

If we except a few cases of intermittents, almost the only fever observed in Paris is that now known under the name of typhoid. Consequently it is upon the phenomena of this disease that the discussions of French writers in relation to the nature of fevers principally turn. Modern investigations have incontestably established that this fever is universally characterized by a permanent lesion of the glands of Peyer; but many authors, and especially M. Chomel, think that this lesion is secondary, and may be compared to the bubo in plague or the pustules in small pox. For the grounds of this opinion we would refer our readers to the clinique of M. Chomel, recently published. M. Littré, too, in a late article in the *Dictionnaire de Médecine*, says, "that the division of fevers into essential and symptomatic is perfectly just, and that it is an error of several modern writers to have neglected it." He looks upon continued fevers as a class of diseases totally distinct from phlegmasia, and which consist of two parallel orders; the one characterized by lesions of the cutaneous envelope, and the other by lesions of the mucous lining. Under these circumstances, and recollecting, too, that typhoid fever, and perhaps the plague, are the only continued idiopathic fevers, except the exanthemata, in which the existence of a permanent local lesion at all partaking of the character of inflammation is generally admitted as proved, it strikes us as incorrect in Prof. Bouillaud to speak of the grand doctrine of the localization of fevers as an indubitable scientific

truth. He admits, too, (in his lectures,) that the nature of exanthematous fevers is totally incomprehensible, and that it is futile to talk of there being symptomatic of local inflammations. In concluding his sketch of the doctrines of Broussais he speaks as follows:

"I cannot say what will be the definite judgment of posterity relative to what is known under the title of the doctrine of irritation, but one may undertake to predict, without being a very great prophet, 1st. That the localization of fevers, known as continued essential fevers, and their introduction into the class of phlegmasiæ; that the doctrine which refers to chronic inflammation various organic alterations previously regarded as morbid conditions altogether distinct from those described under the name of phlegmasiæ; 2nd. That the simplification of the treatment of fevers, and of several diseases formerly comprised in the class of organic lesions and of the neuroses; 3d. That the substitution of the antiphlogistic to the tonic, stimulant, incendiary method, in the treatment of fevers called adynamic and ataxic, one may predict, I repeat, that these three grand ideas insure to him who conceived them and procured their adoption, an eternal glory."—p. 81.

Without wishing to abstract any thing from the glory justly due to M. Broussais, we must say, in reference to the first proposition, that even supposing that typhoid fever is, strictly speaking, symptomatic of an inflammation of the glands of Peyer, it would still be unfair to attribute to him the credit of having *established* the local origin of this fever, inasmuch as he referred the disease to a gastro-enteritis which, in fact, does not exist, the lesion of the Peyerian glands being altogether distinct from a general inflammation of the mucous membrane of the small intestine. Moreover, this lesion was better understood by Prost and other writers anterior to the time of Broussais than by the latter author, and it is only by the investigation of subsequent writers that it has been completely elucidated.

Our remarks upon this subject have, perhaps, been extended too far, but we have been led into it from the tone assumed by Prof. Bouillaud towards some of his cotemporaries who are opposed to him in opinion on most of the questions above-mentioned. His manner of expressing himself is far from being conciliatory, and although he is forced occasionally to acknowledge the services which they have rendered to our science, he by no means renders them full justice.

Laennec is next spoken of. Prof. Bouillaud, at the same time that he gives him great credit for the discovery of auscultation, criticises him in no very measured terms for his opposition to the physiological doctrine. Our author himself appears not wholly exempt from that party feeling of which he accuses Laennec, and which leads him to take a prejudiced view of the character of his opponents. However, he speaks of him in high terms as the inventor of auscultation, and says, that "after M. Broussais he is incontestably the most illustrious physician of the era in which he lived."

In his observations upon the present state of the science, Prof. B. congratulates the profession upon the advanced state of pathology and diagnosis, the influence of which has also extended to therapeutics. In relation to the observation and collection of particular cases of disease, he remarks:

"One of the most prominent characteristics of the present era, is the having, in fact, singularly perfected both the art of observing and recording particular cases, and the art of making, in some sort, the *statistics* of cases collected in greater or less number. I merely notice this latter point, to which I shall be obliged to recur in the second part of this essay, when I shall treat of it with all the detail which its importance demands."—p. 96.

In the previous paragraph he had said, in speaking of M. Lallemand, that "the art of analysing particular cases, of considering them in every point of view, owes much to this profound observer." This we are not disposed to deny; but the remark, introduced as it is, and without the mention of any other name, is calculated to convey the impression that M. Lallemand took the lead in this point. It can hardly be supposed that Prof. Bouillaud would undertake unequivocally to assert this, and it seems to us like an indirect method of detracting from the credit justly and more especially due to others. To show that our remark is in no degree forced, we would beg the reader to observe in the paragraph above-noticed, that the word *statistics* of cases is marked in Italics, and every one knows that the statistics of medical cases and the name of M. Louis are inseparably connected. Yet his name is not mentioned, and we are left to infer that to M. Lallemand is due the principal credit. This sort of injustice, especially towards M. Louis, has been carried to an extreme in the work before us.

Next come a few general reflections upon the spirit of the revolution in medicine, and upon the circumstances connected with its advancement; and the first part concludes with a short account of the history of clinical medicine. It was the practice in early times for physicians to take with them some of their pupils when visiting their patients; but nothing which could properly be styled clinical instruction existed until of late years. Some attribute its origin to Le Boé of Leyden; others date its commencement anterior to this period; but however this may be, it is certain that it was not much in vogue until the time of Boerhaave, by whose pupils were established the famous clinical schools of Vienna and Edinburgh. That of Vienna was established in 1753, under the auspices of Maria Theresa, by Van Swieten. It was in this school, and in the pursuit of this branch of medical instruction, that Dehaen, Stohl, and Hildenbrand acquired their great reputation. Medicine, in fact, being a science of observation, it is clear that no great degree of excellence can be attained by its cultivators, except they devote themselves systematically to a rigid and long continued observation of disease, which can only be well accomplished in a hospital.

Clinical instruction did not exist in France till long after its establishment in Germany. It was only in fact towards the conclusion of the last century that it was introduced into the former country; which now, however, stands unrivalled in this respect.

"The example set by the first professors of clinical medicine," says Prof. B., "has borne abundant fruit. Paris is, undoubtedly, at the present day, the classical city of clinical instruction; in this respect, as in so many others, the capital of France is truly the queen of the world. It is not merely the professors of the faculty, but also the hospital physicians and surgeons, unconnected with this

faculty, who pour out to pupils the inexhaustible stores of clinical instruction. This instruction assumes there, so to speak, every form: clinical courses on medicine and surgery in general; clinical courses on each of the special branches of the great medico-chirurgical tree; clinical courses upon diseases peculiar to different ages. This is what is found in Paris, and what is found nowhere else."—p. 117.

This subject has recently excited attention in our own country, and clinical medicine is already beginning in this city at least, and perhaps elsewhere, to be pursued with some success. But still with us it is as yet in its infancy, and we ought not to be offended at the term; but looking to European institutions as our models, we should endeavour to build up similar edifices.

The second part of the work before us is devoted to the consideration of the principles of medical philosophy, or the method in which the science should be pursued. The means to be employed are twofold, viz: observation and induction or reasoning. The former is first treated of, and in reference to it we are told that phenomena are perceived either through the medium of the external senses, or of internal consciousness. A sketch is then given of the objects to which the external senses are directed, the instruments by which they may be assisted, as the microscope, &c.; and also of the various methods to be made use of, as mensuration, weighing, auscultation, percussion, &c.

"External observation is the mediate or immediate application of one or several of our senses to the investigation of the properties and phenomena of bodies. It is the true torch of the human mind in every thing which belongs to the study of the physical and chemical sciences properly so called. * * * In order that the senses should properly and accurately take cognisance of phenomena, it is not only necessary that they should be well organized, there are two other fundamental conditions, viz: attention and education. * * * The education, or culture of the senses, is obtained by habitual exercise: they acquire by long and frequent exercise a delicacy, and so to speak, a tact, which is truly marvellous. It is true that by the exercise of which we are speaking, the spirit of observation is peculiarly developed and perfected; and it is here, perhaps, much more than in the developement of the senses themselves, that we must look for the secret of that wonderful sagacity with which great observers seize phenomena which are hid from the eyes of the vulgar."—pp. 128-130.

Our author then is not one of those who regard the observation of medical cases as an affair of secondary importance, which is to be entrusted to the mere tyro in medicine, who has had little or no practical acquaintance with disease.

As regards those phenomena which we become aware of in ourselves through the medium of internal consciousness, such as the sensations, moral and intellectual phenomena, &c. we discover them in others only through the medium "of the various modes of expression, and especially of language." Here are sources of error which do not belong to the previous method of observation, and against which the physician cannot be too much upon his guard. Wilful misrepresentations, on the part of our patients, is the smallest source of those errors, which arise mainly from inattention, deficient memory, prejudices, &c. on their part.

Considerable space is devoted to an exposition of the proper method of recording cases.

"Since it is perfectly true that individual cases or facts are, as we have said, the ground work of medicine, the basis of all the ulterior operations on which the understanding is employed for the erection of the medical edifice, the importance of the art of collecting particular facts, or cases, is sufficiently clear.

* * * * *

"In order that a case should be well taken, it is necessary that it should be an exact and faithful representation; a sort of portrait of the condition of the patient at the different periods of the disease, simple or complicated, with which he has been affected. * * * * *

"Sydenham has insisted strongly upon the necessity of omitting nothing in this respect, not even the slightest details; 'in the same way,' says he, 'as a skilful painter preserves in his picture the stains and spots of the original.'"—pp. 140–143.

A formula is given, according to which a case ought to be drawn up, in which are noticed the various circumstances to which the observer's attention should be directed, and what is highly important also, the order in which they should succeed one another. It is unnecessary to enter into the details of this formula, as it is a mere transcript of the method adopted by the most eminent observers of the present day.

The third chapter is occupied with reflections upon the application of theories, systems, and logical induction to medical facts. After having said that, psychology apart, we must proceed in the study of medical phenomena precisely as we would in those of the physical sciences, properly so called, he observes:

"Now, if it is true and universally recognised, that in the physical sciences, properly so called, facts should be explained, interpreted, and theorized upon, it is natural to ask how it happens, that medical men, otherwise endowed with the highest intellectual qualities, have professed that explanations and theories should be banished from medicine?"—p. 141.

Laennec is then mentioned as one of the most illustrious modern physicians opposed to theories and systems in general. Next follows a criticism of the views of Bayle and Chomel, which are contrasted with those promulgated by Bichat, Broussais, &c. upon the same subject. This is one of the most unsatisfactory parts of the book before us. Our author has confounded in his criticism speculative systems with legitimate inductions and generalizations. In this way, the first-mentioned authors are held up to view, not merely as the opposers of the former, but of the latter; which is altogether unjust. Thus a passage is quoted from M. Chomel in which he says that the only foundations of medicine are observation, experience, and *simple and natural reasoning*; that systems are foreign to it, &c. But, by a reference to the preceding sentence of the quotation, it will be seen what sort of systems Chomel alluded to, viz: the speculative systems which have succeeded one another at different periods. Whoever will read the works of Laennec and Chomel will, we think, be soon convinced that their views upon this subject are exactly similar to those expressed by Broussais in the following paragraph, which is quoted in opposition to them.

"Facts are barren when collected without order, or brought together without motive. But, if you arrange them according to their degree of analogy; if you interrogate them separately, after the example of the immortal Morgagni; if you oblige them mutually to elucidate one another, your eyes will be soon struck by an unexpected light, and the horizon of science expand to your view."—p. 165.

The true sin of Chomel and others is, that they were opponents of some of the fundamental doctrines of Broussais, and especially of his great doctrine, that fevers and what are commonly called organic diseases, are the results of local irritation or inflammation.

Of the propriety of applying what he calls the spirit of theory to facts in medicine, or in other words, of analyzing and comparing them, and deducing general principles, we should suppose there could be no question. The points to be settled are, how this reasoning process is to be applied, and how far it can at present be carried. It is not a question about this or the other medical doctrine, but a general philosophical inquiry, applicable to all doctrines, and it should have been so discussed.

However, having settled that a theoretical spirit is to be brought to bear upon the facts of medicine, he proceeds to consider its application more in detail, and acquaints us first of all with the various modes in which it operates. As he here gives us to understand more definitively what he means by the spirit of theory, we shall extract the portion to which we allude.

"To decompose complicated phenomena and facts; to reduce them to their constituent or generative elements (analysis); to combine simple facts and phenomena, and from them form compound facts (synthesis); to investigate and determine the chain of causation which connects certain facts and phenomena to others; to discuss particular observations and experiments, and generalize them, or form them into general propositions; to determine the laws which govern individual cases; to arrange them and connect them together methodically, or systematize them; these are the modes adopted by the mind, and, so to speak, by the *intellectual* and *rational senses* to complete the work of the *observing senses*, and to transform into a regular edifice the scattered materials which the latter had collected."—p. 177.

The above proposition, in its general tenor, seems incontestable; and probably neither Laennec nor Chomel would object to it. Our author proceeds to inform us how we are to apply the methods just enumerated; first, to the discussion of the histories of particular cases of disease.

"When an individual history of disease," he observes, "has been fully and accurately recorded, the mind of the observer endeavours to ascertain what are the influences which have caused the disease; how these causes have operated in the production of the latter; what are the relations between the lesion of the organic actions or condition, and the symptoms which manifest themselves; what are the effects—the results of the different means employed for the cure of the disease. If he is acquainted with facts similar to those which he has collected, he adds it to the list; if the case, on the contrary, is not analogous to others, he places it by itself."—p. 178.

Then follows their application to general collections of particular facts. One of the most important modes of accomplishing this is by what is now commonly known as the numerical method, the merits

of which are pretty fully discussed. This method, as applied to medicine, was first fully appreciated and carried out by M. Louis. We might even go farther, and say that its extensive application was first conceived by him. At any rate, the credit of having adopted it, and introduced it into medicine, as a method of extensive application in the comparison of every species of fact, is as much due to him as the discovery of auscultation is to Laennec. For the partial application of statistics previous to the time of Louis bears just about the same proportion to the numerical system, as developed by him, as the vague conceptions of preceding authors in relation to the physical exploration of the chest do to the luminous discoveries of Laennec. Where shall we find a work in medicine, previous to the publication of the *Recherches sur la Phthisie*, which is based upon this system, or presents even such an approach to it as that it could, with any sort of propriety, be ranked in the same class? It cannot be found. The views developed in the writing of Louis, relative to the mode in which medicine should be investigated, will, we believe, make them to be regarded hereafter as constituting an era in medical science. We do not wish to run into eulogy, or have it supposed that we look upon M. Louis as the oracle of the day, to whom all must bow; we are very far from agreeing with him in all his views; but cannot, at the same time, help raising our feeble voice against the marked injustice which is done him by Prof. Bouillaud, who speaks of him, and that incidentally, merely as one of the most zealous partisans of the system in question.

Prof. Bouillaud is a firm advocate of the numerical method,—although evidently it did not enter into his calculation at the time he published his treatise on fevers,—and he exposes its advantages and claims to attention with considerable force and clearness. He admits that under its influence we shall see “a host of assertions disappear like vain phantoms,” and observes that

“There is no part of the science of medicine in which we do not meet with question of quantity, of more and less, and which consequently on very many occasions, can only be cleared up by means of calculation. How, for example, are we to resolve problems relative to the duration of diseases, to the mortality, without having recourse to the arithmetical or numerical method? How, unless by the application of the same method, can we decide questions relative to the frequency of a disease, according to the seasons, climate, age, sex, temperament, &c. &c.? How, without calculation, determine which of two or more rival therapeutical methods, is the one which cures the greatest number of patients, &c. &c.? It is because they neglected the rigorous employment of the luminous system in question, that our predecessors left so much vagueness and uncertainty in the most important questions of medical statistics.”—p. 186.

Prof. Bouillaud might have added to these, the relative frequency of symptoms, their duration, their period of commencement compared with other symptoms, or with the origin of the disease, as well as various points of connexion between symptoms and pathological lesions, since by means of this knowledge we are frequently enabled to arrive at the most interesting results, either of a negative or posi-

tive character, many of them unattainable in any other way. Thus, as an example of the application of this method, we might mention that Prof. Bouillaud published, some years ago, a memoir, in which he thought he had proved that the anterior extremity of each hemisphere of the brain presides over the faculty of speech. Now, M. Andral, in the last edition of the 5th Vol. of his *Clinique Médicale*, has brought together thirty-seven cases observed by himself or others, in which one or both of the anterior lobes of the brain were the seat of hemorrhages or other lesions. Of these thirty-seven cases, twenty-one lost the power of speech, and sixteen did not. On the other hand, he has collected together fourteen cases in which the power of speech was lost, and where *no alteration* was found in the anterior lobes of the brain. Hence he concludes that loss of speech is not a necessary consequence of the lesion of the anterior lobes, and besides that it is found in cases where anatomy discovers to us no alteration in them whatever. M. Andral is careful not to push his conclusion so far as to deny unequivocally the supposed connexion between the anterior lobes and the faculty of speech, no doubt because he could not be sure that the above-mentioned cases had been observed with sufficient accuracy and detail to justify him in regarding such a conclusion as established, although they might render it very probable. We have cited this merely as an instance of the mode in which the numerical method is applied, and also to show that the latter is not confined merely to a few general questions, such as the influence of age, sex, &c. upon the course of diseases, but is applicable to the comparison of symptoms with pathological lesions, and as we may hence readily perceive, to the great mass of medical questions. The numerical system is, in fact, to the physician, very much what practical analysis is to the chemist; it enables him to isolate phenomena, and to view them in a great measure independently of the thousand perturbing influences and complications which exist in any individual case of disease, as it is presented to our observation. By multiplying cases and taking the mean in reference to any one phenomenon, the effects of foreign influence are reciprocally destroyed. It gives to us accurate and positive data, frequently unattainable in any other way, from which we may proceed in our reasoning with a feeling of certainty and satisfaction. Doubts are dissipated and certainty substituted in its place; written records, whose value is determinable, supply the place of vague recollection; facts are separated from opinions. It should not be forgotten that the numerical method, strictly speaking, merely serves to determine data, from which our inductions are to be made. In order that the latter should be correct, many precautions must be observed in reference to the character of the former. We cannot enter into the details of these here, and would refer those who wish to investigate the matter further, to the volume before us, and especially to an essay of M. Louis, published in the first volume of the *Transactions of the Medical Society of Paris*.

Prof. Bouillaud is a firm advocate of the propriety and necessity of applying this system extensively to medicine. He adduces in sup-

port of it the evidence of La Place, by whom the calculation of probabilities has been applied to the complicated questions of morals and politics. He is on numerous points opposed to the gentlemen who have been principally instrumental in promulgating and enforcing the adoption of it in medicine, and it is therefore the more gratifying to find him in a true philosophical spirit, coming out as its supporter. Such a mind as his, in fact, could not fail to appreciate its value, after having once given it a full consideration. It is in its application to the solution of therapeutical problems that it has been especially objected to, and for this reason he directs his attention especially to the exposition of its advantages in this particular. He says,

"In fine, whoever appeals to experience to settle a therapeutical question, makes, unconsciously, perhaps, an appeal to the numerical method, since without the latter, experience is necessarily deficient in precision, and so to speak, in laws."—p. 192. Again,

"The great objection which may be made to the numerical method, is that it does not operate upon perfectly similar cases. But it is evident that this objection is applicable in all its force, and in all its fulness, to practice, unaided by figures. In fact, to him who tells you he has cured more frequently, as well as to him who tells you the exact number of his successful cases, we may equally make the objection that the cases were not the same. This objection being common to *vague* experience, and to experience enlightened by figures, falls, as it were, of itself.

"It is quite true, that in practice, we never find two cases perfectly identical, just as we never find two men perfectly alike. But is this a sufficient reason why we should not employ calculation in therapeutics, and draw from a collection of facts conclusions which will be applicable to other facts of the same kind? If it were so, experience would be a word devoid of meaning, and therapeutics would forever float in uncertainty. Happily this is not the way in which diseases pursue their course. The sum of resemblances between two long and equal series of cases relative to one and the same disease far outweighs that of their differences, and consequently we can conclude from one to the other."—pp. 192–193.

Having made us acquainted, however, with the importance of taking into account the various circumstances which may modify a particular disease, as its severity, the length of time which may have elapsed since its commencement, the age, sex, constitution of the patient, &c. he concludes with a long extract from Louis in reply to those who object to the method in question, in which he endeavours to show that it is no more necessary, in order to form a comparison between two series of cases, that the individuals composing them should be in every respect perfectly identical, than that all the leaves of a tree should be precisely of the same size, colour, thickness, &c. in order that we may be enabled to give a general description applicable to every one of them. Before leaving this subject, we would observe that the employment of the numerical system, as it is called, does not preclude the use of other modes of arriving at general results. It, in fact, merely furnishes the data on which our reasonings and inductions are to be founded. It renders the conclusions of the latter more certain however, by supplying a broader and more solid foundation on which to

build them. If some of its supporters appear to be opposed to theories, it is not that such opposition is a necessary consequence of the system spoken of, or that they are really opposed to them in principle; but that seeing the impossibility, in the present state of our science, of establishing any general doctrine of medicine, for want of a sufficient number of positive data, they are disposed, for the present, to abandon all general theory, since it must necessarily be, more or less, a work of the imagination. An opposition to theory in medicine, and that too a general one, is altogether unphilosophical, and utterly inconsistent with any great grasp of mind or extensiveness of view. To hear the remarks which are occasionally made about Louis, and the system of Louis, we might suppose that he was the merest plodder in facts that could well be conceived, and that his chief credit consisted in his recording long and accurate histories of disease. Those, doubtless, are not to be despised, and in their greatest degree of perfection, are not to be compassed by men of ordinary minds; for the perfection of a case consists, to a great degree, in the bringing out, so to speak, of its strong points, and in the arrangement of its different parts in such a way that they shall bear to one another their natural proportion. Neither does his reputation altogether depend upon the general and important results which he has obtained from the philosophical analysis of his cases, although these are sufficient to ensure imperishable renown. But his greatest claim upon our admiration, arises from his having first fully appreciated and carried out the numerical system, in its application to medicine. Returning to Paris at a time when the medical mind was much excited, he perceived that the facts in possession of the profession were too meagre to admit of determining, through their means, the questions which divided medical opinion. He saw too that what were called facts, were not, in all probability at least, really such, and could not serve as the basis of a philosophical system. In this state of things he had the genius to conceive, and the ability, to a certain extent, to carry out a great plan for the establishment of a better foundation on which to raise the superstructure of medicine. To accomplish his great object, he buried himself for several years in the wards of a hospital, observing disease day and night, avoiding all amusements, and, to a great extent, the society of his friends, and this too in the prime of life, and subjected almost to the scorn of his fellow practitioners, who laughed at his projects. The results, however, have verified the correctness of his view, and will entitle him to a place amongst the brightest luminaries in the temple of science.

The demonstration of medical truth, and the degree of certainty attainable in medical questions, is the subject of the next article. He says that there is at present much of our knowledge in medicine which has acquired a high degree of certainty; and that if generally there is more uncertainty in it than in the other branches of natural history, it is because it is more complicated, and also because its philosophy is but just beginning to acquire precision and exactness. He goes on to observe,

"However this may be, medicine, as a science founded upon observation and experiment, employs in order to arrive at truth, the same processes and methods as other sciences belonging to the same category, viz: direct demonstration, or that of facts, and indirect demonstration, or that of induction and analogy. If, in certain cases, we arrive through the medium of hypothesis, at the discovery of truth in medicine, as in some other sciences, it is only when those hypotheses are themselves founded upon facts, or at least upon incontestable principles of logic.

"Demonstration by facts is, of all others, the only one which cannot be resisted by sound minds, the only one which possesses *really the force of law*; and the assertions of pure induction, those especially into which hypotheses enter as elements, do not definitively acquire the right of being ranked among the number of incontestable truths, until they shall have been confirmed by positive facts."—p. 203.

Neglecting some slight inaccuracies of language and inconsistencies of expression, we cheerfully subscribe to the general opinions expressed in the above paragraphs.

Our author proceeds to observe that we must not "effect an absolute contempt for assertions founded upon induction," which although it may sometimes have led into error, is not to be abandoned. One would suppose that he was fighting against an opponent of his own creation, for it is inconceivable that any one should despise induction without despising himself. The question is not, whether induction is to be employed at all in medicine, but how it is to be employed, and under what circumstances, and within what limits. But instead of a philosophical inquiry into these points, he enters at once into a criticism of some of his cotemporaries, which although sometimes amusing and even witty, is far from being just. It does not seem to elucidate principles, but rather to involve them and introduce confusion, for the same word is not always used by the different authors criticised in precisely the same sense. Prof. B. instead of endeavouring to arrive at their real meaning, has made use of the circumstance mentioned, to hold them up as supporters of what they do not approve. Besides, his own views on the subject do not appear to be very clear, and he does not sufficiently define his meaning to render his remarks of much practical value.

The fifth article is occupied with reflections upon the *sources of error* in medicine. These are two-fold; viz: errors of fact and errors of theory or explanation. The great extent and variety of the facts which we are called upon to appreciate, their complexity, the inattention of physicians in observing them, the neglect of some important organ, the want of knowledge of the various methods of exploration, &c. are so many fertile causes of the first class of errors. Those of the second class, we are told, may derive from the first, or they may be the result of sophistry, of false induction, &c.

"Of all the errors of theory which infect medicine, the most common proceed from this—that reasonings are founded upon a false principle and upon false data."

As usual, he proceeds at once to criticise; and with it the remainder of the article is occupied. M. Chomel is the sole subject of it.

This physician, who was but just before held up as enemy of all induction, is now presented to us as the author of a "captious argumentation," which is "very specious at first sight, and conducted with so much art that it would, necessarily, notwithstanding the contradictions with which it abounds, notwithstanding the instability of the greater part of its fundamental principles, seduce a certain number of readers." This specious argumentation is contained in an extract of several pages from the late work of Chomel on typhoid fever, where he endeavours to show that this disease does not essentially consist in the intestinal lesion which characterizes it, viz: the inflammation of the follicles and mesenteric glands, but that these latter are secondary, like the buboe of plague. Prof. B. then proceeds to expose the fallacies contained in it; but in which we shall not follow him. We shall merely notice the first fallacy to which he alludes, by way of giving the reader a specimen of what Prof. Bouillaud regards as sound argument. He says,

"Because the inflammation is seated in the glands or intestinal follicles, it has been inferred (by M. Chomel,) *'that no medical observer of the present day looks upon typhoid fever as a gastro-enteritis; that it is as clear as the day that it is not in the mucous membrane of the stomach or intestines that the anatomical lesion which characterizes this affection is situated.'* Now, this is equivalent to saying that the follicles of the mucous membrane of the stomach and intestines are not situated in this membrane; for, if they are situated there, it is *as clear as the day* that we cannot thus say, in a formal manner, that the lesion of them is not situated there."—p. 234.

This reasoning of Prof. Bouillaud has not even the merit of being specious. It amounts to this, that because the mucous membrane is involved, (no matter in how slight a degree, and it is sometimes very slight,) therefore it is wrong to say that the disease is not a gastro-enteritis. It would be precisely a parallel argument if he were to tell us, that because in anthrax the skin is involved in the inflammation, therefore it is wrong to say that the anthrax is not an erysipelas. The cases are precisely similar, since the disease of the glands of Peyer commences, and is mainly situated in the sub-mucous tissue, and in an exceedingly circumscribed portion, too, compared with that of the whole length of the alimentary canal.

The second part of the work concludes with some very just reflections upon the moral qualities favourable to the investigation of truth. He warns physicians against the influence of pride, self-love, party-spirit, prejudice, envy, &c. in blinding their minds to truth, and preventing them from doing justice to the discoveries of others, whom, instead of regarding as fellow-labourers, they are determined to view as rivals. No one will hesitate to give full assent to his remarks upon this subject; and it is only to be regretted that he has not given to his precepts the weight of his example.

The third part is devoted to the general consideration of clinical medicine. This may be regarded either as a science or as a mode of instruction. In the former point of view, it is nothing else than the knowledge of diseases; whilst in the latter, it is *medicine taught at the bed-side*.

"I shall give in this third part," says Prof. B., "merely some general remarks upon *clinical medicine*, considered as a science, and not as a mode of instruction.

"The general views which I propose to deliver in this third part will run, 1st. Upon the causes, nature and philosophical classification of diseases. 2nd. Upon their seat, their extent and their anatomical characters. 3d. Upon their symptoms and diagnosis. 4th. Upon their duration, their course, their type, and their terminations. 5th. Upon their prognosis. 6th. Upon their treatment."

He admits that our knowledge of the causes of disease is exceedingly limited; that some morbid causes of which the atmosphere may be the vehicle, cannot be detected by any instruments which we possess; and that perhaps they never can be appreciated otherwise than by their effects upon the human body, which is a more delicate instrument than any constructed by art. But although ignorant of the essential principle which gives rise to certain diseases, we may determine the external condition favourable to their production and consequently the means of preventing them.

"Thus, for example," he remarks, "we are ignorant of the principle *sine qua non* of typhus, but are well aware that the crowding together of a great number of men in a confined space, that the use of putrified food, &c. are conditions which give rise to this principle, and that consequently in order to preserve ourselves from the disease in question, it is indispensable to avoid the circumstances above indicated. We are ignorant of the virus of the mad dog, but know perfectly that the saliva is the reservoir of it, that it is absorbed along with the latter, and we prevent its effects by cauterization practiced in time, &c. &c."—pp. 249-250.

He ranks atmospheric vicissitudes amongst the most common causes of disease, entirely dissents from the modern writers who think that the extent of those influences has been very much exaggerated, and supports his opinion in part by reference to the authority of Hippocrates and Sydenham. That other conditions come into play to favour or retard the operation of atmospheric variations, and consequently that a slight exposure to them will sometimes produce an effect which a greater one will not do under other circumstances, is very probable. But we have no right hence, to conclude that atmospheric changes of temperature are not the principal causes of the production of a great number of diseases, though doubtless they frequently operate merely as accidental ones. We agree then with Prof. Bouillaud on this point, for the experience of ages in a question like the present is not lightly to be cast aside, until positive proof can be produced of its fallacy, which has not been done in the present instance. As the causes of diseases are but little understood, "their intimate nature," says our author, "must be involved in darkness, and consequently their classification, founded upon this basis, must be imperfect." He thinks that a great fault of most nosological systems is, that they are founded exclusively upon the vital properties, the changes in which necessarily resolve themselves into the three following, viz: augmentation, diminution, or alteration of these properties. He thinks that the physico-chemical nature of diseases must enter as an essential element in every good classification, and proposes that diseases should be divided into

mechanical, physico-chemical and vital. In reference to the seat or localization of diseases, he says:

"If there be an axiom in medicine, it is assuredly the following proposition, viz: that no disease exists without a seat. If we admitted the contrary opinion, we must admit also, that functions may exist without organs, which is a palpable absurdity.

"The determination of the seat of diseases, or their localization, is one of the most beautiful conquests of modern medicine."—p. 257.

Our author justly attributes this to our advanced knowledge of anatomy and physiology, and goes on to observe that for the most part, diseases are located simultaneously both in the solids and fluids of the living economy.

"If this were the proper place, we could bring forward an immense number of facts to establish that all the fluids in general, and the blood in particular, are susceptible of marked and great changes, either *primitive* or *secondary*. * *

"The question about general and local diseases has been the source of disputes which still continue, but which will be put an end to, when the terms of the question shall be well defined, and good faith shall preside over all discussions. Let it suffice to say here, that the *general* systems being susceptible of attack in every part which enters into their composition, it is evident that in these cases the disease will be necessarily general. The blood, the study of which belongs to the vascular system, cannot undergo a change throughout, without there resulting from this a general disease, &c."—p. 261.

The views above expressed must be admired for their justness, and it is to be regretted that the author has not carried them out practically in his criticisms. Had he done so, he would not have led his readers to suppose, as it appears to us he has endeavoured to do, that certain individuals were opposed to the doctrine of the local origin of fevers, merely because they do not see fit to locate them in the alimentary canal.

Mr. B. proceeds to observe that,

"On the other hand, there are very many diseases, which, primitively, at least, affect but a single organ, but a single one of the generative elements of an organ: Now, in opposition to the preceding, these constitute local diseases. Of these latter, few remain local, in the strict sense of the term. Thus, for example, the greater part of inflammations soon extend themselves," &c.—p. 261.

He then goes on to observe that local diseases are generalized through the medium of the great sympathetic, through that of the continuity or contiguity of tissue, or by means of absorption, as when pus or other morborific matters are absorbed into the mass of the blood. He admits that diseases at first general, may subsequently localize themselves, though he thinks that this doctrine has been very much exaggerated.

In the article on morbid anatomy we find some excellent reflections in reference to the mode in which post-mortem examinations should be conducted. Much stress is laid upon the necessity of making a thorough and complete examination, and of employing every method within our reach calculated to render our observations more precise. He tells us too, that post-mortem examinations, carelessly and imperfectly made, are worse than none, inasmuch as they may lead into error.

We have often had occasion to verify the truth of this remark, and it cannot be too forcibly impressed upon the mind of those who undertake upon the ground of such examinations, to denounce the evidence of physicians, whose investigations have been conducted with the greatest accuracy and most unwearied assiduity, aided by long habit and a thorough acquaintance with the subject. We have often heard physicians deny the existence of a lesion, which a more careful examination and a better acquaintance with the requisitions of pathological anatomy would have enabled them to discover, and as a consequence of their mistake misinterpret the whole character of a case.

Much of what has been said above, applies with equal force to the study of semeiology, in treating of which our author lays much stress upon the importance of paying attention to the condition of the fluids.

"Up to a very late period, the semeiological examination of the liquids was but little attended to. I have felt myself bounden and been obliged to supply in part this deficiency. During the last four years, the blood, the urine, the saliva, the perspiration, and the sputa have been objects of special study to me. This study has not been, I hope, completely lost to science. I cannot give here all the details of these researches; suffice it to say, that in the principal diseases (*grandes maladies*) the liquids in general, and the blood and urine in particular, present alterations, or if you choose, symptoms, as constant as those furnished by the exploration of the living solids."—p. 280.

He then goes on to say that the blood, in cases of acute inflammation, is so entirely different from that found in typhoid fever, that we can, by the mere examination of the blood drawn, distinguish with certainty the two diseases.

He further informs us that the results of his researches, which have already been in part published in the *Journal Hebdomadaire*, will be fully exposed in a treatise on general pathology, which he intends shortly to publish.

"Diagnosis comprehends two principal things; viz. 1st, a knowledge of the seat of the disease; 2nd, a knowledge of its nature. Now, in order to deduce this two-fold knowledge from semeiological data, we must necessarily admit that these latter are the faithful translation, the formal revelation of the diseases."—p. 282.

Others assert, on the contrary, that we often find a perfect identity of symptoms in cases where the lesions discovered to us by anatomy are very dissimilar, or even altogether absent. Our author contends, on the other hand, that the contradiction alluded to between the symptoms and the disease must be apparent and not real. If it were otherwise, he says, we could no longer admit this evident principle, this axiom, viz: that the effect is proportionate to the cause and reciprocally.

This is true no doubt in theory, but in point of fact there exist many diseases, especially of the brain, which give rise to symptoms so nearly identical that it is difficult in practice, at all times, to draw the line of demarcation between them. Thus we have seen softening of the brain mistaken for typhoid fever by the most profound diagnosticians; because in the instance alluded to the symptoms to which the former gave rise so nearly resembled those usually charac-

terizing the latter, especially we presume with reference to the brain, as to have led, if not necessarily, at least very easily, into error. Many cases analogous to the above in fact occur, in which we must depend chiefly for our diagnosis, not upon what may be called the physiological symptoms, but upon a knowledge of the circumstances under which the disease arose, its commencement, course, invasion, collateral circumstances, &c. Hence, as we mentioned in a former part of this review, the necessity of interpreting symptoms, not merely as connected with the organ to which they physiologically belong, but also with the general disease, where such exists, of which they constitute one of the representatives. Prof. B. also admits the possibility of different lesions of one organ giving rise to symptoms nearly similar, and instances nervous palpitation and hypertrophy of the heart, where the latter is slight; mentioning, at the same time, that in such cases we must weigh most carefully every circumstance connected with the disease.

The chapter on the cause, duration, &c. of diseases commences as follows:

"The terms *acute* and *chronic* are applied to diseases according as their course is rapid or slow, &c. * * * * And as the same disease may, during the whole term of its evolution, take on successively the *acute* and *chronic* course, this distinction does not apply to the nature or essence of diseases, but merely to their form. This remark might appear unnecessary, I know; it nevertheless seemed to me indispensable at a time when some physicians imagine that they have fully proved that two diseases differ in their nature merely because one belongs to acute diseases and the other to chronic diseases."—p. 289.

The conclusion of the above paragraph should be reversed in order to represent faithfully the views of the physician or physicians to whom Prof. B. doubtless alludes. These individuals uphold that certain diseases, the distinction in the nature of which they conceive to be established by *numerous* and cogent arguments, derived from an investigation of symptoms, pathological appearances, &c. are also found to be characterized by the circumstance that one is generally acute and the other chronic. But their difference of nature is not at all based upon this circumstance, any farther at least than as it may come in as a collateral proof after the principal point has been mainly established upon other grounds. The diseases here alluded to are what are called inflammation and organic diseases, as cancer, tubercles, &c.; which latter our author regards as identical in nature with the former, as depending upon chronic inflammation. This question we cannot discuss at present, and will merely observe that we conceive it can be fairly established, from the most undoubted data, that organic diseases, as tubercles, &c. are, in the immense majority of cases, not merely chronic in some part of their course, but chronic from their commencement, or, in other words, chronic in their nature. On the other hand, we think that pure inflammation, not kept up by mechanical or other accidental causes, is in the great majority of cases acute, or, in other words, is characterized by acuteness.

Of the various circumstances which affect the duration of diseases,

he regards the treatment as the most important and influential, and especially bleeding, when employed in the manner which he recommends, and of which we shall speak farther on. He thinks that in this way the duration of several eruptive diseases may be diminished, and that many inflammations, as pneumonia, &c. may be completely cut short.

Speaking of the types of diseases, Prof. Bouillaud expresses the opinion that the intermittent type is peculiar, or nearly so, to the neuroses. He continues,

"Continued and intermittent fevers are not then, in my opinion, one and the same disease. The first, as we know, belong to the class of phlegmasiæ. Now, a true phlegmasia, such as a pneumonia, a pleurisy, an *enteritis*, acute or chronic, is never, strictly speaking, intermittent."—p. 295.

He concludes by expressing the opinion that intermittents are probably neuroses of the sympathetic nerve. We pass over a few remarks on the prognosis and mortality, and proceed to the sixth and last chapter of the third part, which is occupied with the treatment of diseases.

Prof. Bouillaud regards it as an axiom, and few will be disposed to deny its truth, that diagnosis is the base-work of therapeutics, and goes on to say that

"Therapeutics is really nothing more than a deduction or corollary from the ideas or doctrines which we have formed upon the *nature* of diseases."—p. 302.

This proposition seems inconsistent with the admission that the *nature* of many diseases is altogether or partially concealed from us; and, with the opinion subsequently expressed, that a principal means of introducing certainty into therapeutical science, and of determining the curative value of therapeutic formula, is to make a statistical comparison of the mean results obtained by those different formulæ in different series of cases similarly circumstanced. Now it is evident that conclusions obtained in this way are the mere results of direct experiment, and in no way connected with our views in reference to the *nature* of diseases, except in so far, at least, as these views may have led us to experiment with one method of treatment rather than another. But we shall be told, that although this method is required in the present imperfect state of our science, yet still it is not the less true, as an abstract principle, that therapeutics is deduced from our views of the nature of diseases. That therapeutics will be so deduced at some distant day is possible, but it is clearly incorrect to say that it is so, and we notice the error especially, because we think that this and other analogous general propositions, practically inapplicable to any great extent in the present state of our science, are calculated to lead into gross errors. Such propositions are attractive to young and ardent minds, necessarily possessed of but few facts derived from their own experience, and consequently disposed to adopt a synthetical rather than an analytical method of reasoning. The latter, however, is almost exclusively applicable to medicine in its present condition; for the little knowledge which we possess of the laws which regulate the operation of the vital forces, and of the essential nature of morbid phenomena, must preclude the

possibility, as a general rule, of our reasoning from cause to effect. The errors to which we allude are the adoption of hypothesis to enable us to carry out the principle which we have erroneously adopted, as one which is generally and practically applicable at the time, and a consequent distaste and neglect for the strictly analytical results of direct experiment and observation.

We extract the following because we think that it places in its true light the present state of therapeutics.

"In the present condition of therapeutics, the numerical method, in particular, cannot be too much employed, conformably to the rules which we have previously laid down. Indeed, since, as regards a large number of diseases, physicians are not agreed about the nature of those diseases, or about the value of the means which we oppose to them, or about the mode of action of those means, a comparison of the number of individuals who have died or recovered after the employment of each rival method, is then a document of the highest importance. Before deciding definitely upon the superiority of this or that method, of this or that therapeutical formula, we should be particularly careful to repeat and multiply comparative experiments. In proceeding thus by *means of large numbers*, in the appreciation of the comparative or absolute value of therapeutic methods, we are sure to avoid serious errors. Whoever will pursue this course, provided he is endowed with a mind which is well balanced and free of prejudices, will soon be able to determine the value of any given treatment. At all times, I know, that therapeutic methods have been judged by their results, and each practitioner brought forward in support of his own, the large number of his cases. But they counted them in a vague manner, and by mere guess work (*à peu près*.) Now, the true and proper method of calculation does not consist in saying, I have cured a *great many patients*; I have cured *more than such or such a one of my professional brethren*; but in setting forth in figures the precise number of deaths and cures, under the influence of a certain treatment, and under circumstances as rigorously determined as possible, and in comparing the amount with that furnished by an equal number of patients treated by another method, and placed under circumstances similar to the preceding."—p. 305.

Our author then thinks, that a method whose results are established independently of any doctrines in relation to the nature of particular diseases, is the one to which we are principally to look for the advancement of therapeutical science. He admits too its deplorable uncertainty in many points, and that it rarely adopts means the action of which can be clearly explained. He even says that some of the medications employed upon purely empirical grounds, are, to say the least, as efficacious as the most rational methods.

He admits that there is, as a general rule, a tendency in the animal economy when diseased to restore itself to a healthy condition; but thinks, on the contrary, that in ordinary acute diseases of the abdomen, chest, and head, the expectant method of treatment would be a perfect scourge.

Although therapeutical indications are founded upon the nature of the disease, when the latter is precisely known, it is, nevertheless, true that,

"As in a great number of cases, this nature is either partially or entirely unknown to us, it follows that the indications can only be furnished by the expe-

rience which we have acquired of the utility of such or such a means, in cases analogous to the one which we have to treat.—p. 322.

In the concluding section we are made acquainted with the importance, when endeavouring to arrive at the value of a particular method of treatment, of looking not merely at its general character, but of determining with precision the elements composing it. Thus, if we wish to determine the effects of a remedy, we must fix its dose and the time of its repetition. Sanguine emissions are mentioned as an example, and we are told that the effect of these varies exceedingly, according to the length of time in which a given amount of blood is drawn. It is then strenuously asserted that frequent bleedings, repeated at short intervals, are followed in most acute inflammations, (pneumonia, pleurisy, &c.) by results so astonishingly favourable, as to be almost incredible to those who have not witnessed them, and altogether different from those obtained by the moderate bleedings usually practised. M. Louis, on the contrary, has published a work in which he has endeavoured to sustain the opinion that the efficacy of bleeding in the inflammations above-mentioned, has been very much exaggerated. The amount of blood drawn, however, in the cases from which those conclusions are drawn, was moderate; and consequently Prof. Bouillaud argues that M. Louis has no right to infer from the results which he has obtained, that bleeding when practiced in a different way, or as our author says, *coup sur coup*, may not be followed by very different effects. The paper of M. Louis has been replied to by M. Donné, one of his former pupils, an extract from which, of more than eight pages, is given in the present work by Prof. B. The arguments of M. Donné are certainly very forcible, and we cannot help admitting that M. Louis in thus restricting the efficacy of bleeding, *in general*, in the diseases mentioned, has been very far from exercising his usual caution. His conclusions, in fact, are only applicable to bleeding as employed by him, and in this light only are valuable.

The above remarks will serve as an introduction to the fourth part of the present work, in which a parallel is drawn between the therapeutical results obtained by the new method of sanguine emission and those derived from that usually adopted.

Prof. Bouillaud claims the paternity of the former, and eulogises it in the following language:

“During the last four years, since the commencement of which period we have waged this rude warfare against acute inflammations, and which will form the subject of the following reports, it seems really as though we had entered into a new world. These diseases no longer mock the physician and his remedies, as in the time of MM. Louis and Chomel. In the presence of a crowd of pupils, and of many of our fellow practitioners, we have, at the bedside of the patients, and with the book of M. Louis in our hands, examined the assertions of this practitioner in reference to the slight efficacy of blood-letting in the diseases which he has mentioned, and every one has been perfectly convinced that those assertions, applicable only to the small and inefficient bleedings of M. Louis, are refuted in the most happy and clear manner by the numerous cases in which we have put in practice our formula of sanguine emissions frequently repeated (*coup sur coup*.)”—pp. 347-348.

A numerical analysis is made of the cases of pneumonia, typhoid fever, &c. treated by this method under Prof. B.'s direction in the wards of La Charité. A comparison of the amount of mortality and other circumstances is then made between these series and others treated upon the old method. From certain statistical data he establishes the mortality in pneumonia treated according to the old plan, in the Paris hospitals, as about one in three. It should be recollected, however, that these data refer to a period anterior to that in which he commenced his new method of treatment, and consequently that he compares results obtained in different years, which renders his conclusions somewhat doubtful, as under the same treatment the mortality in different years in the same disease often varies. However, the mortality in pneumonia at La Charité, according to the new method, is only one in eight or nine. The difference is certainly enormous. The amount of blood taken in each case was of course very different, but the average quantity was four pounds nine or ten ounces, or nearly double that recommended by Sydenham under similar circumstances. The smallest amount taken was one pound twelve ounces, and the largest ten pounds. Of course we speak of the amount taken both locally and generally. The peculiarity of Prof. Bouillaud's method consists especially in the frequent and quickly repeated bleedings, and not merely in the quantity of blood drawn. Of course it is understood that the method is to be adopted promptly at the outset of the disease. The bleedings are to be repeated as a general rule three times on the first day, each bleeding being from twelve to sixteen ounces, on the following day twice, and so on, so that the whole amount shall be taken in the first three or four days. Results very similar to the above were obtained in typhoid fever and other acute diseases. We shall not undertake to discuss the relative value of the two methods of treatment, as further data are certainly required to settle the question. Before leaving the subject, we will merely observe, that during a late discussion in the Academy of Medicine of Paris upon this subject, it was asserted by M. Louis that he lost only about one in eight of his pneumonic patients treated according to the old method. He stated likewise, that in typhoid fever his loss was less than one in nine, which is a smaller mortality than that claimed by Prof. Bouillaud as the result of his new method. As we said above, new investigations must be entered into and a comparison made between different series of cases observed during the same year or years, and if possible, in the same hospital.

T. S.

ART. XI. *A Treatise on the Diagnosis and treatment of the diseases of the Chest.—Part I. Diseases of the Lung and Windpipe.* By WILLIAM STOKES, M. D., M. R. I. A., &c. Hodges & Smith: Dublin, 1837.—8vo. p. 557.

Dr. Stokes is well known to the profession in this country from his excellent course of lectures on the practice of medicine, which were fully analysed in some of the preceding numbers of this Journal; and is eminently distinguished for the successful efforts which he has made to render the study of disease more precise, and to diffuse a more general taste for those physical means of investigation which have so much increased our knowledge of diagnosis. The school of Dublin is largely indebted to his efforts, and to those of his colleague, Dr. Graves, for its celebrity, and it is now amongst the most deservedly celebrated in Europe, and in some respects superior to any in the British Islands.

The present work is the first part of a treatise which, when completed, will embody the most important facts known relative to the diagnosis and treatment of thoracic disease; and is the more valuable on account of the long-continued personal observation of Dr. Stokes, which has enabled him to verify, and carefully to sift the facts announced by the continental observers, as well as to add a considerable quantity of original matter. There is no other work so rich in the details—none, in which the new truths in physical examination discovered by Laennec and his successors, are set forth so concisely and at the same time in so intelligible and useful a manner. The works previously published are either so diffuse that the more valuable materials are too deeply concealed for ordinary use, or they are too much abridged, retaining more or less of the character of manuals.

The diagnosis of pectoral diseases is now so well understood that a reviewer may very properly confine himself to the slender task of pointing out the few facts of a novel character that a writer has been enabled to add to the number already possessed by the science. But while we shall endeavour to indicate the additions which medical science has received from the labours of Dr. Stokes, we shall venture still farther, and will not refrain from calling the attention of our readers to what may perhaps be already familiar to them. It is not enough that a fact is true, or that it is admitted by those who have had the inclination and the means of verifying it; a large class of readers are slow to believe what is new, or perhaps hesitate to receive the best founded opinions, because they are not familiar with the evidence necessary to conviction. In the latter case, the hesitation is well founded, and can only be overcome by a patient and thorough examination of the subject, or by that slower and almost insensible process by which we arrive at many truths; that is, the frequent representation of facts under so many and different forms that the judgment is convinced without an effort of attention.

A treatise on physical diagnosis is useful on other grounds. The signs of thoracic disease do not change, but from year to year their cause is better understood, and the connexion between them and the

general symptoms is better defined. These changes can only be pointed out by the occasional appearance of a work on the subject, and that they are considerable, we may perceive by comparing the work of Dr. Stokes with the first or even with the last edition of Laennec. The diagnosis and even the pathology of diseases of the chest cannot become free from difficulty until the physical means of explanation are completely blended with our ordinary methods of examination, and regarded simply as the key to a particular set of symptoms. Hence we perceive that the most recent investigations of these affections lay less stress upon the physical signs; not that they are less true, but because their existence is assumed as a fact which every one may verify, and because they are so evident that they may serve as a starting point for other and more difficult researches.

Excellent as the work of Dr. Stokes will be found, it perhaps falls a little short of our expectations in this respect, scarcely inviting sufficient attention to those general symptoms which make up so much of the pathology of disease. Still it would be unjust to reproach one who has done much and that well, with not doing more; this sort of imperfection is inherent in our ablest productions, and it is no small praise of a work, that its merits are such as to give us greater cause to regret an imperfect developement of certain portions of it, than reason to complain of the inaccurate or unscientific mode of treating the subjects which are most fully illustrated. But we cannot avoid stating that the relative importance attached to the physical means of explanation is too great; they are brought forward into too strong a light, while that nicety of observation of particular symptoms and refined calculation of probabilities which indicate the higher degrees of skill in diagnosis are rather thrown into the shade. We may venture to speak thus, because we fully appreciate the utility of physical exploration after years of constant familiarity with its various methods, and are convinced of their accuracy and ready applicability to all cases of thoracic disease.

This warm partiality for physical investigation which we criticise in Dr. Stokes is, perhaps, a result of the school in which he was educated, and of the course which he has pursued. As a pupil of Laennec, he was naturally led to devote his efforts to the diffusion of a knowledge of those means of investigation which were then received coldly, or looked upon as completely deceptive. In conjunction with Dr. Graves, the author published, what at the present day would seem unnecessary, a statement of cases, to prove that auscultation was, in reality, founded upon observation, and that the physical signs correspond to fixed pathological changes. Since Dr. Stokes's return to Dublin he has been constantly engaged in the duties of instruction, and especially in diffusing amongst his countrymen a knowledge of pathology and of organic medicine which have led to such brilliant results in the hands of some of the French pathologists. These pursuits have rendered him one of the most able pathologists and accurate observers of our times; but they have not led him to push his inquiries into those portions of pathology which are comparatively little known; they have made him a teacher rather than a discoverer.

The school of Dublin is, in some measure, marked with the same peculiarity. It teaches admirably pathology as it is known, and has one advantage over most continental schools in possessing a system of therapeutics more in accordance with the views generally received in this country; but it is certainly inferior to the Parisian school in that intimate knowledge of pathology and active spirit of research which must, ultimately, prove the only certain means of increasing our knowledge of exact medicine. This apparent deficiency is probably the necessary consequence of the small number of observers who are interested in prosecuting medicine as a science, with but a slender expectation of ultimate pecuniary reward. In this respect the British Islands resemble the United States, and will probably never present the spectacle, so frequent in France, of men of mature age, and high scientific endowments, resisting the temptations of private practice to devote themselves to the patient, laborious, and in a pecuniary way, profitless pursuits of medical science. Such will ever be the case in those communities in which, fortunately for mankind, commerce and manufactures offer large rewards for the employment of capital, and, indirectly, rather obstruct pursuits in which an immediate advantage is not presented.

The introductory chapters, relative to the method of physical examinations and the explanation of the chief pathological changes on which it is founded, are interesting; but as they are necessarily more or less familiar to most of our readers, we shall pass at once to the examination of the author's remarks upon individual diseases.

Bronchitis is sometimes regarded as one of the most easily understood of all the affections of the chest. The word is used as synonymous with catarrh in its acute and simple form, but it is also employed by practitioners on numerous occasions as a convenient cloak to conceal their ignorance of the real mischief that is going on in the lungs. Hence we hear the term bronchitis applied to phthisis, to various chronic diseases of the larynx and trachea, and even to chronic pharyngitis. These applications of the word are so far right, that few diseases of either the membranes or the substance of the lungs can long continue without the supervention of bronchitis. But in such cases the term bronchitis is used in so general a signification, as to lose all precision. For practical purposes the disease strictly deserves the title when it is so important as to give rise to decided symptoms, or even to threaten the life of the patient; and we should endeavour to distinguish such cases from the mass of ill defined affections with which they are often confounded. Such a separation involves great difficulty, and we fear that even the acknowledged ability of Dr. Stokes has not quite removed it.

Dr. Stokes alludes to a fact with which we have been often struck; that is, the greater simplicity of disease which is discoverable by more accurate anatomical investigations. Successive founders of systems of medicine, attempt to reduce all diseases to the same general laws of development and treatment. The rapid succession of those systems has shown their emptiness. Such will ever

be the case with all systems that are based upon similar data; for, before we simplify and form general laws, we must discriminate and analyze. The only truly general laws in medicine are, therefore, those which have been deduced from a very laborious and patient separation of the phenomena of disease into such minute subdivisions as may even appear puerile to those who do not comprehend their ultimate object. But where these distinctions are more clearly made, and stand in bold relief from the confused mass of symptoms, which our ordinary observation discovers, we are struck with the beauty and harmony of the laws of nature which gradually bring together these scattered elements, and reduce to order a confused mass of minute and seemingly unimportant details. What should we now know of the history of tuberculous diseases more than our predecessors have known, if we had not sought for their anatomical characters, not merely in the lungs, but in all the viscera in which this morbid deposit may present itself? The inflammation of the mucous membrane of the lungs will probably be thus simplified; but its shades are so numerous, and occur under such varied circumstances, that we cannot but object to the vague manner in which the term is at present employed.

Dr. Stokes has well described the more important forms of bronchitis, but he has not been sufficiently precise in pointing out their distinctive characters; nor is the gradual passage of one form into another, always indicated with so great a richness of detail as to enable the pupil to seize its characteristic features. The deficiency, however, is perhaps less attributable to the author than to the imperfection of our knowledge, which will require the contributions of several successive observers before the study of thoracic pathology becomes complete.

Acute bronchitis is pretty well understood as to its signs and ordinary course; little can be added to the descriptions already possessed of the acute form of the disease, except as to some modifications of the physical signs. We are not entirely of the opinion of Dr. Stokes, that the percussion is not rendered more dull in severe bronchitis; for if the smaller tubes be inflamed to any great extent, an experienced and delicate touch will discover a slight dulness. Some degree of skill and some acuteness of sense are necessary to render this sign very appreciable; but nevertheless, it has a certain value for those who are sufficiently skilful in physical exploration. We attach some importance to it on account of its early occurrence in those varieties of bronchitis which are afterwards complicated with phthisis, especially the miliary acute phthisis, or the tuberculous infiltration; both of which varieties often occur in the lower lobes of the lungs instead of following the usual law of previous development in the upper lobes. The rhonchi afford the most constant physical signs of bronchitis; if they are absent for a time, a forcible inspiration, which drives the air into the smaller tubes, may reproduce them: but this does not always succeed; so that cases of bronchitis are now and then met with in which no rhonchus can be

detected. This absence of rhonchus may depend upon various causes; chiefly on the limitation of the inflammation to the largest tubes, which do not obstruct the passage of the air unless they are blocked up by copious secretions.

The general conclusions of the author as to the pathology of acute bronchitis are the following:

"1st. That in almost all cases percussion gives no direct sign.

"2nd. That an accumulation of mucus in the inferior portions of the lung may give a certain degree of dullness.

"3d. That in the great majority of cases, in which there is a coexistence of the signs and symptoms of bronchitis with dullness, we may infer the existence of some disease, either of the parenchyma or of the pleura.

"4th. That conversely, the absence of dullness with the existence of irritation of the lung, gives a great probability that the case is one of simple bronchitis.

"5th. That a copious effusion of muco-purulent matter may exist in the bronchial tubes, without perceptible dullness of sound on percussion.

"6th. That in certain cases of bronchitis with effusion, a metallic sound may be produced on percussion. This is somewhat similar to the *bruit de pot filé* of caverns, but it is to be distinguished from it by the clearness of sound, its greater diffusion, and the absence of the stethoscopic signs of a cavity.

"7th. That in many cases, on application of the hand, a distinct vibration is felt in accordance with the motions of respiration.

"8th. That the modifications of respiration, as observed by the stethoscope in bronchitis, seem to be connected with mechanical obstruction more or less complete, and which may proceed from one or all of the following causes: turgescence or hypertrophy of the mucous membrane, the existence of various secretions, and lastly, the occurrence of a spasm.

"9th. That in the mode of occurrence of the various phenomena there are the greatest possible differences in different individuals.

"10th. That as a general rule it may be stated, that the more intense the sonorous, sibilous, or mucous *râles*, or any combination of them, be during ordinary respiration, the more severe may the disease be considered.

"11th. But that in certain cases of intense bronchitis of the minuter tubes, the sounds during ordinary respiration cease to be a measure of the intensity of disease, as they become louder during the convalescence of the patient.

"12th. That in the secretive stage of bronchitis the mucous rattle may occur, on the one hand, with large and isolated bubbles, and on the other, may pass into a *râle* almost crepitating, the sound on percussion still continuing clear.

"13th. That in consequence of bronchial inflammation, the entrance of air into a certain portion of the lung may be prevented, under which circumstances the signs are nullity of respiration, with persistence of clearness of sound.

"14th. That this obstruction may result from an organic change of the mucous membrane, or from the plugging up of the tubes by their own secretion.

"15th. That in the first of these cases the absence or diminution of the respiratory murmur is permanent, while in the second it may be temporary, and removable by a fit of coughing; yet even in this case, the obstruction by a concrete mucus has continued from the period of its occurrence until the fatal termination.

"16th. That if, in a case of mucous catarrh, a certain dyspnœa supervenes, with absence or diminution of the respiratory murmur in a particular portion of the lung, this portion also preserving its clearness of sound on percussion, we may make the diagnosis of obstruction of the bronchial tube by its own secretion."

Acute secondary bronchitis very properly claims the author's attention. After mentioning its frequent occurrence in typhus and

typhoid fever, (by the way, not distinguishing between the former disease and the latter as described by Louis,) he speaks of the frequent and early occurrence of bronchitis in the exanthemata. This complication establishes a strong degree of resemblance between these affections and the continued fevers, in which an eruption occurs upon the skin, although less evident than in the strictly exanthematous diseases. It is asked whether these inflammations are especially distinct from the same diseases occurring in the idiopathic form. We cannot positively answer this query, although we investigated the subject with extreme care at the Children's Hospital of Paris, a few years since. We, however, then ascertained that there are two distinct forms of inflammation of the air passages; one of which may be considered as specific, and is caused either by the cutaneous irritation extending directly to the mucous membranes, as often happens in small-pox and scarlatina, in which the fauces, larynx, and even the bronchi are thus affected; or else there is a sort of metastasis of diseased action, in consequence of the eruption not appearing fully on the exterior of the body, or arising from the extreme violence of the disease, which prevents the eruption from being limited to the exterior. Now in these cases, the inflammation is certainly specific; it is analogous to, and sometimes identical with the cutaneous eruption. This variety of bronchitis is totally independent of treatment. But there is another variety which is scarcely specific, and which differs in the various exanthemata. Each of these fevers has a peculiar election for the portions of the mucous membrane that is inflamed; measles attacking the smaller tubes, and often extending to the parenchyma of the lungs; scarlatina affecting the larger bronchi; while variola is much less constant in its laws. Now this secondary bronchitis, which is not always present, usually occurs quite late in the disease, is neither regular in its progress, nor peculiar in its symptoms, but resembles other forms of the disease occurring after febrile affections. It is much more amenable to treatment than the last mentioned variety; although still a dangerous affection from its obstinacy, and aptness to terminate in lobular pneumonia, or tuberculous disease. As measles are most frequently attended by secondary bronchitis, it is more necessary to watch children after the entire cessation of this disease, than after their recovery from the other exanthemata.

Physicians are often consulted for an obscure form of disease, which excites the solicitude of patients, and induces them to suspect the developement of pulmonary consumption. It is a constant cough, not always attended with fever, and in the majority of cases, is without the emaciation and general disorder of the economy which characterize the tuberculous disease. The chest, on examination, will be found free from the signs of phthisis, or even of bronchitis; sometimes the latter affection exists in so slight a degree as not to account for the obstinacy of the symptoms. The cough is usually slight, and followed by no expectoration, but sometimes it is extremely loud and even shrill, much more sonorous than in genuine bronchitis. These cases constitute the chronic secondary bronchitis of our author and may be readily distinguished by one familiar with the physical means of exploration.

If the signs of local disease be not sufficient to account for the cough, we are at once sure that the real seat of disease is not in the chest, but in a distant organ. Our diagnosis is rendered more certain by attending to the peculiar characters of the cough, which certainly differs from that of ordinary pectoral diseases.

We must here avoid an error which proves seriously injurious to the well being of the patient, and the reputation of the practitioner, viz: that is, many varieties of chronic cough may exist for a certain time, without positive disease of the lungs, but afterwards an important organic change in this organ be developed; sometimes as a direct consequence of the same disorder which gave rise to the secondary cough. This is especially true with respect to tuberculous disease of the lungs which often follows a slight cough, and other disordered functions of various organs. Hence, even when we are perfectly sure that the lungs are not actually diseased, we must take care not to overlook the first indications of that general tuberculous disease which may not yet have given rise to serious pulmonary disorder. The knowledge of the physician is here tested more severely than in almost any other point in pathology.

We shall pass over the author's judicious remarks on the treatment of bronchitis, and on the pathology of emphysema, chronic lesions of the bronchial tubes, and the diseases of the larynx.

Pneumonia is regarded by Dr. Stokes as differing from bronchitis merely in the addition of inflammation of the parenchymatous tissue which introduces a new anatomical element, but not a new disease. If the author had restricted his opinion to certain varieties of bronchitis and pneumouia, we should not have differed with him; but we cannot believe that because the tissue of the lungs is, in a great degree, composed of minute bronchial tubes, every kind of pneumonia is little else than a bronchitis of the minute tubes. In fact, as we have already stated, the varieties of brouchitis are so numerous that we can scarcely speak of it as one single affection; these varieties do not depend exclusively upon anatomical structure, but are in a great degree produced by difference in individual constitution, and by epidemic influences. Bronchitis, therefore, of an active inflammatory nature, is so closely connected with pneumonia as to pass into it by a gradation which is quite insensible; while the bronchitis of debilitated subjects is rarely connected with parenchymatous inflammation, and almost never shows a disposition to pass into that active state of inflammation which is almost characteristic of genuine acute pneumonia. The latter disease sometimes evidently commences in the cellular tissue itself; or, at least, its connexion with the smallest bronchial tubes is only secondary, and is confined to a limited portion of the lung. It is this kind of pneumonia which may follow external injuries, and be often unattended with expectoration. A remarkable case of this occurred under our observation a year or two since, in a young girl, who was wounded by the accidental discharge of a gun. Several shot passed into the lungs, crepitant rhonchus, bronchial respiration and dulness of percussion followed; but there was no expectoration.

The author admits a stage of pneumonia previous to the first stage as described by Laennec; in which we agree completely with him, although some of his deductions are not founded on genuine pneumonia. In a case of death from extensive burn, the tissue of the lung presents the same bright red arterial tint observable in certain cases of acute phthisis. Although this bright arterial redness, which we have often observed, is in some cases dependant upon real inflammation, it appears at other times independent of it, and accompanies cases of hæmoptysis from exhalation. The diseased action is hemorrhagic, rather than inflammatory. This opinion seems confirmed by the phenomena of inflammation in other tissues, where the tint even during life is less florid. When the first stage of inflammation was really found, the redness, although intense, was never so bright as in cases of hæmoptysis. This stage of inflammation probably occurs before liquid is effused into the smaller tubes, and therefore, as Dr. Stokes remarks, it is really antecedent to the first stage of pneumonia admitted by Laennec.

The signs of the earliest stage of pneumonia, that is, where no crepitating rhonchus has yet been heard, are stated to be obscure. There is the same obscurity in that rare variety of pneumonia in which the crepitus is entirely wanting throughout its whole course. We have had an opportunity of carefully examining this point in a number of cases, and the following are the conclusions derived from these observations:

1st. That when the pneumonia was superficial, a very fine crepitant rhonchus occurred very early, and was in reality the *first* physical sign. The early occurrence of the crepitus in such cases is readily understood from the anatomical structure of the lungs. At their surface the vesicular portion is found with the most minute bronchial ramifications; now, this tissue is the seat of the crepitant rhonchus, and where it is inflamed while the adjacent portions remain so healthy as not to obstruct the passage of the air, the crepitus is heard very early, perhaps it is sometimes produced before the least secretion of liquids, and may arise merely from the increased dryness and stiffness of the air cells. When the lung around the larger tubes is inflamed while the superficial pulmonary tissue is still sound, a different course is observed.

2nd. In the latter cases the first change is undoubtedly a modification of respiration, which we call rude or rough; that is, an increase of the blowing sounds during inspiration and expiration. The respiration may also be puerile, as stated by Dr. Stokes; that is, the roughness of the sound may be attended with a noisy vesicular expansion; or, the natural vesicular murmur may be even enfeebled, and the increase in the blowing sound alone indicate the obstruction to the passage of the air. These alterations in the sound of respiration occur very constantly in adults, and in children who are sufficiently old to present the regular form of pneumonia so frequent in adults; in younger children, who offer a different variety of this disease, the alterations of the respiration are nearly the same if the pneumonia be not preceded by bronchitis. In the latter case, the rhonchi are

so loud as to obscure the slighter alterations of sound. In all such cases, the simultaneous occurrence of fever and other symptoms more immediately connected with the respiratory system render the local signs of more value. Amongst the general signs, is to be classed the extraordinary prostration of the system, characteristic of pneumonia, and pointedly distinguishing it from ordinary pleurisy.

The description of the signs of pneumonia in the second and third stage are detailed by the author with the accuracy we might expect from one of the most skilful auscultators of the day. The absence of bronchial respiration in many cases in which the lung has passed to the third stage of inflammation is pointed out, and is explained by the very general solidification of the lung, which prevents motion in the side affected; so that a current of air is not driven through the bronchial tubes with sufficient rapidity to produce the bronchial respiration. This explanation is not entirely satisfactory: for if the pneumonia be most advanced at the base of the lung, the bronchial respiration ceases very soon, even before the third stage occurs; the tubes are there comparatively small, and readily obliterated by the tenacious mucus which blocks them up in the advanced stages of those affections; the air is thus completely excluded, and no sound occurs during respiration.

Typhoid pneumonia is a very interesting form of disease, which is frequent in Dublin, and at times prevails in this country. Dr. Stokes considers typhoid pneumonia as an inflammation of the lung, occurring in individuals of impaired constitution and under certain *epidemic constitutions* depending upon unknown causes. Besides this form, which is the type of the disease, the author classes under the same head the varieties of acute pneumonia which occur during the course of typhus and typhoid fever, as well as in phlebitis, delirium tremens, erysipelas, or diffused cellular inflammation. This classification is rather too general, as the pneumonia attending phlebitis or consequent upon operations and extensive suppurating surfaces differs much from the other varieties. In other respects there is an apparent analogy in these forms. Nor is this to be wondered at, for the same low, depressed state of system exists in all those cases, and may either give rise to the ordinary anatomical characters of pneumonia with merely a difference in symptoms, or to a disease which presents a different pathological state, and is rather disposed to pass into gangrene than to secrete either lymph or pus.

As a general rule, the local signs of pneumonia, when it occurs as a secondary lesion during the course of febrile affections, or as a primary disease of low action, constitute the only sure means of distinguishing it; for the cough and pain are slight, or wanting, and the general symptoms are either confounded with those of the primary disease, or are obscured by the feebleness of the patient. Still, even the local signs differ from those of ordinary pneumonia, and we rarely meet with the decided bronchial respiration or quickly formed dulness of the acute disease. The rhonchi are more humid, and this disease is much more slow in resolution, passing frequently into tuberculous degeneration of the lung or gangrene, and is occasionally

followed by rapid softening and the formation of a large cavity without the presence of tubercles.

The observations relative to the treatment of pneumonia are highly judicious, and show that Dr. Stokes's zeal for pathology has not led him to neglect the all important subject of therapeutics. It requires some thought, and a certain habit of exact yet enlarged analysis, conjoined with the most expert and attentive observation to ascertain the best method of treatment in pneumonia: and while the views of the most judicious physicians are not yet settled as to the precise value of various therapeutic agents in the treatment of pneumonia, we must examine with care the statements of the ultimate success obtained from various modes of practice, and even inquire into the immediate advantage resulting from the action of particular remedies; these therapeutic problems although both important, are still distinct.

The general method of treatment recommended by the author coincides with the experience of physicians in this country. We could have desired a more complete account of some peculiarities requiring modifications in a mode of treatment, apparently the best fitted to diminish the mortality and suffering. For in pneumonia, as in other acute diseases, it is important to impress upon the student the necessity of watching for peculiarities in the form of disease, and of modifying his practice in its different stages. Hence a mode of treatment, which seems sanctioned by reason and experience, may be productive of harm if applied without due discrimination.

At Dublin, one or two general bleedings are found sufficient. Now and then a severe inflammation may occur in a stout and young subject, in which blood-letting may be repeated with advantage, or may even become necessary; but in most cases one or two bleedings, proportioned to the severity of the disease, and to the strength of the patient, produce a sufficient impression if employed at the commencement of the disorder. After the first days, venesection must be sparingly practiced. General bleeding is chiefly advantageous in the sthenic form; that is, the active acute inflammation tending to secrete pus and lymph. Still the abstraction of blood rarely cuts short the disease, although it almost always lessens many of the constitutional symptoms, and relieves the patient, while it has a certain influence in shortening the disease and diminishing its mortality. Now this is the precise result obtained by all conscientious observers; at least our observation in America confirms the facts ascertained at Paris, and corroborated at Dublin. In the few cases in which the disease was entirely arrested, depletion was used very early.

The asthenic form of the disease, or typhoid pneumonia, (using the term in the extended signification given to it by Dr. Stokes,) not only does not require, but may be seriously injured by free blood-letting. Dr. Louis does not indicate the distinction between the two forms of pneumonia; and therefore his observations lose part of their positive value. In this form few practitioners now bleed from the arm, or do so very cautiously and generally after cupping has been premised. If a large bleeding be practised, an extraordinary prostration of strength speedily follows, from which the patient may recover with

difficulty. The ulterior effects of the remedy are far from being sufficiently advantageous in such cases, for us to risk the production of so great a degree of prostration. This kind of pneumonia has been extremely frequent at Philadelphia, during the present winter; and little advantage has resulted from large general bleeding; cases treated by local depletion, with stimulating expectorants, diaphoretics, and the mercurials, recovered with much greater rapidity.

Local is considered more efficacious than general bleeding; it is undoubtedly a most powerful remedy, although Dr. Stokes has perhaps an extreme partiality for this mode of depletion. It comes in most advantageously in the treatment of the asthenic, and in the latter stages of ordinary pneumonia, where the oppression is great, but the general feebleness prevents the abstraction of blood from the arm.

The practice at the Meath hospital is to use either the antimonials in large doses, or mercurials after the use of general and local bleeding. That is, the antimonial practice is next in power to blood-letting, to which it is rather an adjuvant than the principal remedy. With this proviso Dr. Stokes bestows the highest approbation on this mode of practice; he begins in doses of four to six grains in the twenty-four hours, and gradually increases to ten or twelve grains; it is rarely necessary to give more than from twenty-five to thirty grains during the treatment. With the phenomena of tolerance we presume our readers to be sufficiently acquainted; when the remedy is not borne without much uneasiness after two or three doses are taken, we rarely persevere in its administration. If the only symptom be a slight purging, it may be checked by a moderate quantity of opium. In the majority of cases, patients become accustomed to the use of the medicine, and actually regain their appetite while taking considerable doses of it. The remedy must be watched, and even when tolerated should not be continued too long: thus, if no sensible diminution occur during the course of the second or third day, we generally suspend the antimony; agreeing with Dr. Louis, that unless the good effects of the remedy are seen within the first forty-eight hours, but little advantage can be anticipated from it. If great depression follow its use, it should be immediately discontinued, or be given in very small quantities, especially if the patient be of a nervous temperament. If the brain be much affected and the sensibility of the patient diminished, there is a danger of ulceration, and therefore the precept of not continuing the remedy beyond a few days should be rigidly observed in such cases.

The mercurials answer best in the treatment of the asthenic form, and in the advanced stages of the ordinary pneumonia; in this city the practice is to give calomel in small quantities combined with ipecacuanha, and sometimes with opium, so as to excite a slight ptyalism. Blisters are also very useful in these forms of disease, and although they are much less powerful in shortening the duration of the disease than blood-letting, are undoubtedly valuable remedies when the disease is still unresolved and the strength of the patient is failing.

Dr. Stokes is partial to another favourite American remedy; the Seneka snake-root combined with carbonate of ammonia. In the suppurative stage of the sthenic, and even in some of the early stages of the asthenic forms, we have derived benefit from tonics; these form a very useful remedy. In some cases of drunkards we have even ventured upon brandy punch and other stimulants with great advantage. The diaphoretics of a stimulating character are also amongst the more valuable remedies in the asthenic forms of pneumonia.

We have said much of the treatment of pneumonia, because we believe that a great part of the success of various practitioners will depend upon their distinguishing between the two forms of the disorder. In our clinical lectures we have long insisted upon the necessity of great care in this respect, and we are glad to find that Dr. Stokes is so fully aware of the importance of this point, which is comparatively overlooked by the French physicians.

Gangrene of the lungs is mentioned in rather a cursory manner by Dr. Stokes, who contents himself with giving a few brief cases. We shall pass over his account of it, and also that of carcinoma, proceeding to the more frequent, and therefore more important disease, tubercle of the lung.

The enumeration of the physical signs of tubercle is very complete, and indicates the extreme care with which Dr. Stokes has studied the subject. There are but two or three points which he has omitted or passed over very slightly. One is the mode in which the respiration becomes rough or imperfectly bronchial in the early stages of the disease, a condition which may accompany either a feeble or puerile respiration; and another is the imperfect account which he gives of the modification of the resonance of the voice very early in the disease. The frequent feebleness of the respiration on the right side of the chest is mentioned, but the author has not stated that there was also at the summit of the right side a very slight rude respiration in a large number of healthy individuals; now this circumstance must modify in an important manner the signs of commencing phthisis.

The physical signs of phthisis are, however, more useful in pointing out its exact course and progress, than in indicating with certainty that the disease is present at the very commencement of the tuberculous secretion. For, however great our skill in diagnosis may be, we cannot expect that we shall be able to distinguish the disease from the physical signs, except when its very earliest seat is in the lungs, and in a limited portion of the lungs only; tubercles in very small numbers cannot be detected unless they are congregated in a very small portion of the pulmonary parenchyma. When we inquire into the history of the tuberculous disease we find that the law of their earliest developement in the lungs, though general is not universal, and that even in cases in which it holds good, the local diseases are insignificant compared with the disorder of the general system and rapid decline of the patients. Now the great object of refined diagnosis is to ascertain the signs indicative of this constitutional disturbance, and reduce them to a positive formula.

Although we lay the greatest stress upon these general symptoms,

we attach much importance to the negative value of the physical signs, as a means of proving to us that the lungs are not yet much affected. A discovery of this kind gives the physician strong ground for hope, although it does not allow him to affirm, in opposition to the evidence of general symptoms, that the patient is absolutely free from consumption. Such assertions are often most unhappily contradicted by the unexpected appearance of unequivocal consumption.

Dr. Stokes has, perhaps, not regarded it as within his plan to enter much into the diagnosis founded upon general signs. He has very graphically described the prominent varieties of phthisis; but it is rather with the view of affording facilities for diagnosis by means chiefly of the physical signs, than with the intention of rendering general symptoms immediately useful for this purpose. The chapter upon tubercles would have acquired additional value by bringing forward every sign which could throw the least light upon so obscure a subject as incipient phthisis. Without the most thorough acquaintance with the symptoms of the general tuberculous disorder we are led to study its ultimate effects rather than its commencement; with such a knowledge we still labour under difficulties; but we have a thread which will sooner or later guide us from the labyrinth. A careful study of the author's divisions and descriptions of the tuberculous diseases of the lungs will, in some measure, diminish this difficulty. He divides phthisis into the following varieties:

"1st. Acute inflammatory tuberculation of the lung without suppuration. 2nd. Acute suppurative tuberculation. 3d. Chronic progressive tubercle, with signs of local and general irritation; pulmonary ulceration. 4th. Chronic progressive ulceration succeeding to an unresolved pneumonia. 5th. Tuberculous ulceration succeeding to chronic bronchitis. 6th. Tubercle consequent on the absorption of an empyema. 7th. Chronic phthisis complicated with pneumo-thorax from fistula. 8th. Tubercle complicated with disease of the larynx. 9th. Latent progressive phthisis. 10th. Chronic latent but partial tuberculation. 11th. Chronic general tuberculation. 12th. Cicatrization of cavities."

Of these the acute inflammatory form, without suppuration, is the most formidable. Dr. Stokes has never witnessed it except as a sequel or complication of typhus. It generally occurred after the subsidence of the fever, a sort of interval occurring between the two affections. The same disease is a frequent consequence of typhoid fever; but it may occur without being preceded by either. In these cases of primary tuberculous disease, the violence of the fever, the profuse sweat, the rapid emaciation, and the frequent chills are better indications of the disease than the local signs, which are at first necessarily doubtful; for the tubercles are deposited under the form of granulations, which are *disseminated* throughout the lungs instead of being collected at the summit.

Frequently this tuberculous fever is not connected with much bronchitis, for the irritation of the bronchial mucous membrane is not always great in the early stages of the variety which begins without an obvious cause. When bronchitis is present, it differs from the usual form, in resisting all ordinary means, and rarely terminating in recovery. The only remedies of much avail, are those which modify the constitution in general, and which tend to check the pro-

fuse sweats, and exhausting fever. Hence the treatment which we have found most effectual is the use of the mineral acids; occasionally an opposite treatment consisting in the administration of tonic infusions with the addition of the carbonate of soda, combined with rather a generous diet, proves more useful. Local treatment is generally of little avail, because the local disease constitutes but a small part of the disorder, and even if the bronchial irritation be arrested, we may be far from checking the general tuberculous disorder.

In the last mentioned variety, the tubercles do not pass beyond their crude state, but the acute tuberculous disease may assume another form and pass rapidly into softening. These cases are generally dependent upon tuberculous infiltration of the lung, and often begin in the lower lobe. They constitute the variety of disease so common in this country among the negroes, and frequent in France amongst the wild animals kept in confinement at the menageries. It is, perhaps, the most intractable form of phthisis.

There is another variety of phthisis which may demand a modification in the treatment; it is that which is consequent upon an unresolved pneumonia. Although the ordinary pneumonia is not a frequent cause of phthisis, the asthenic variety is often immediately followed by its development. These cases demand continued counter irritation, and are almost the only instances of phthisis which may properly be treated by the mercurials.

The treatment of phthisis, as recommended by the author, is in accordance with the views generally received. The local irritation which so often attends it, should be removed by local depletion and other means of a similar character; and by a few appropriate general remedies and change of climate, we should attempt to modify the general constitution. Unfortunately this effort is, in the immense majority of cases, unsuccessful; still we believe that much may be done towards producing a cure in a small proportion of cases, and that we may greatly relieve the symptoms in a larger number.

The tuberculous diseases of children include an important part of the pathology of those affections: we regret that Dr. Stokes's plan did not include them. The key to the study of the general tuberculous disease may be found in the affection as it occurs in children, and by commencing the observation of the disease as it occurs in early life, we become familiar with many facts of importance for its diagnosis.

The diseases of the pleura are of less difficult diagnosis than those of the lung, and do not require the same minute examination. With them terminates the interesting work of Dr. Stokes; a second part will probably include the diseases of the heart.

W. W. G.

BIBLIOGRAPHICAL NOTICES.

ART. XII. "*Des amputations dans la continuité et la contiguité des membres; leurs avantages et leurs inconvéniens.* Par C. E. SÉDILLOT. Paris: 1836. 8vo. pp. 80."

On amputation at the joints and in the middle of the limb. By C. E. SÉDILLOT. Paris: 1836.

Amputations at the joints, from having been in common use among the ancients, had almost fallen into oblivion when in the early part of the last century attention was again directed to them by Morand, Heister and Brasdor, who adopted the practice, and urged its more frequent employment. They showed by facts collected in their writings, the peculiar fitness of these operations to certain cases, and the facility of their execution, at the same time that they exposed the exaggerated statements which had been made in regard to their dangers. The success of these endeavours to revive them, was, however, only partial, and it remained for some of the French surgeons of our own time to bring them fully into notice. The more recent investigations of Larrey, Lisfranc, and Velpeau, at the same time that they have tended to make known their true dangers, have set forth their advantages, and pointed out the joints to which they are especially applicable.

The work of M. Sédillot is a brief and well written exposition of the comparative advantages of amputations in the continuity or middle of a limb, and those in the contiguity, or at the joints. In the first part of it the question is considered generally. In the second, the operations are treated of individually, and in both attention is more particularly directed to amputations in the contiguity from the latter being those which at this time demand most the attention of the profession.

The principal advantages offered by amputations in the contiguity are, 1st. The rapidity with which they may be performed. Requiring only the division of soft parts, it is evident that they can be made much more quickly than those amputations in which a bone must be divided. 2nd. They permit the preservation of a portion of the limb which would be lost in other amputations, and of which the utility is unquestioned. Thus the tarso-metatarsal, or Chopart's amputation in the tarsal bones, may sometimes be substituted for that of the leg, and thus prevent a sacrifice of the heel and ankle, the former of which from giving a firm support to the body and offering facilities for the application of an artificial member, and the latter, by preserving its motions, are of immense importance to the patient. The fore-arm in its whole length is much more useful and better adapted for receiving an artificial hand than a fore-arm in part amputated. Besides, by operating in the joints mentioned, we do but conform to that sound principle of always amputating at the greatest possible distance from the trunk, it having been long since established that the further from the body, and the less fleshy the part amputated, the greater the chance of recovery after it. 3d. The pain is much less than in amputations in the continuity. In the latter, the division of the bone itself often causes acute pain, and the dissecting up of the skin and muscles by increasing the duration of the operation, adds greatly to the amount of suffering. A fourth advantage dependant on the little time required for these amputations, is the trifling loss of blood which they occasion. By expert operators limbs may be removed at the larger

joints almost without hemorrhage by having the principal branches seized at the moment the flaps are divided, whereas in amputations in the continuity, compression must be maintained during the section of the bone; and, as the circulation in the veins is thereby more or less obstructed, considerable loss of venous blood always takes place. From the slight hemorrhage that need occur they offer a precious resource in subjects already much enfeebled, and who could not support without increased danger a loss of blood however slight. Disarticulations are also less likely to be followed by inflammation of the medullary tissue of the bones than where a section of these is required, and owing to the muscles not being divided, there is less subsequent danger of spasm of the stump and projection of the bone.

It has been said that reaction is more violent after amputations in the contiguity than after those in the continuity of bones, but we are without sufficient proof of the correctness of this assertion, and from *à priori* reasoning we should, with our author, be inclined to doubt it. Cartilages are unorganized and insusceptible of inflammation, and consequently their exposure alone cannot give origin to any febrile symptoms.

The tissues forming the flaps in disarticulations, and the coverings of the ends of the bones, are stated by some authors to be unfavourable to prompt reunion, but we find in practice that union by adhesion generally takes place with greater facility here than in other amputations, and at the smaller joints almost invariably occurs. In proof of this we may mention the success of Alanson, who made perfect cures in fifteen cases of disarticulations of the phalanges in from eight to twelve days, and since his time very numerous examples of rapid recoveries after these operations in the large joints could be cited.

Of late years much attention has been paid to the subjects of phlebitis and purulent absorptions. These are the most frequent causes of death after amputations, and M. Sédillot states are less common after amputations in the articulations than after those in the continuity. This arises, he thinks, from the fact, that the bottom of the wound in the latter presents the rough end of a bone, filled with numerous open veins, always ready to absorb the matter that may be secreted, and to propagate rapidly towards the trunk any inflammation that may arise; whilst in the former, the bone is covered by a smooth substance, free from vessels of any sort, and consequently incapable of absorbing rapidly, or of transmitting readily diseased action to distant parts.

Such are the general advantages offered by amputations in the contiguity, as pointed out in the first part of the work, and we now pass on to the second part, in which their application to the individual joints is treated of. In diseases of the fingers M. Sédillot recommends never to amputate beyond the affected parts; and where this object can be attained by sawing through the phalanges, he advises that we should do this rather than disarticulate them, believing that the immense advantage of preserving even a very small portion of the finger, more than compensates for the longer duration and difficulty of the operation. The same precept is equally applicable to the metacarpal bones, and he correctly remarks, that a surgeon would be in the highest degree censurable who should remove the whole hand in a case where a portion of these bones only are affected. At the same time he observes that where the thumb can be saved, or even a part of a finger, although the rest of the hand be lost, it should invariably be done. With the majority of the French school of the present day, our author thinks it unjustifiable to amputate any portion of the fore-arm, if it be possible to remove the diseased or injured part by disarticulating the wrist.

Amputation at the elbow joint was adopted, and if we may so speak, legalized, by M. Dupuytren. It is declared by M. Velpeau to be less dangerous than amputation of the arm in its continuity, but M. Sédillot justly thinks that we are not as yet possessed of a sufficient number of facts to substantiate this statement, and prefers, in all cases, removal of the arm according to the common method. Nothing shows more strikingly how much the dangers of am-

putations at the joints have been exaggerated than the results following disarticulation of the shoulder. Dupuytren, who frequently resorted to this operation, states that it is less fatal than amputation of the arm itself. M. Gouraud, of Tours, believes it "scarcely more dangerous than amputation between the joints," and inclines to the opinion that in gun shot wounds it is even preferable. The same opinion has been upheld by Lafaye and Baron Larrey, the latter of whom had ninety-seven recoveries out of one hundred and eleven amputations at this part. Ribes, an experienced army surgeon, has "rarely seen it prove fatal," and M. Blandin says, that ordinarily cicatrization is perfect in less than a month, and that serious accidents are perhaps less frequently produced by it than by amputations in the continuity of the arm above its middle portion. By M. Sédillot, however, the inconveniencies of the operation are thought to exceed those of amputation in the middle of the arm, which he recommends wherever the nature of the case permits of a choice.

When the toes are to be removed, disarticulation is in all cases to be preferred. In cases of gangrene, injuries, or any other cause necessitating a sacrifice of the anterior part of the foot, our author counsels amputation in the continuity of the metatarsal bones in preference to the tarso-metatarsal disarticulation; though at the same time he thinks that amputation of the leg should never be had recourse to, as long as either this or amputation in the tarsal bones can be substituted for it. In regard to amputation in the continuity of the metatarsal bones, we partake fully the opinion of M. Lisfranc, who states, in opposition to our author, that the action of the saw on these small bones is apt to produce inflammation in the neighbouring articulations, and be followed by a tardy recovery.

Amputation in the articulation of the knee has of late years found a warm supporter in Professor Velpeau. In the memoir urging its employment, published by him, fourteen cases of this operation are given, in thirteen of which it had a happy result; from whence he concludes that it is more successful than amputation of the thigh, and recommends it accordingly. Larrey, in his report to the French Academy on this memoir, states that in three instances in which he had employed it, his patients all died. Volpi and Monteggia have also been unsuccessful in trials of it, and M. Velpeau himself has more recently had two fatal examples at La Charité. If to these be added the cases which have not been published, it is probable that the number will more than counterbalance the thirteen cures mentioned. M. Sédillot is of opinion that further observations are required to determine the value of the operation. Disarticulation of the hip is so infinitely more dangerous than amputation of the thigh in its continuity, that no parallel can be drawn between the two operations. During the long period of the French wars it was not unfrequently performed by their military surgeons, and has also been resorted to in their civil practice, but according to our author only two instances of recovery after it have been seen in France. One of these is the case of Perrault in 1773, which is also the second recorded of the operation. The other is the patient of Mr. Guthrie, operated on after the battle of Waterloo. The success reported by Delpech is not counted, as death took place here almost immediately after the cicatrization of the wound.

In this country surgeons have an unwarranted dread of all amputations at the articulations, arising from a commonly received opinion that they are almost invariably followed by severe inflammation and fatal results. That these operations in some of the joints are apt to be followed by unpleasant consequences we are firmly persuaded, but that they are applicable with great benefit in others, we are equally certain. Believing that they are resorted to less frequently with us than they advantageously might be, we have noticed somewhat in detail the above work, in the hope of calling attention to the subject. There is no evidence that the issue of most of them is not as successful as that of common amputations, the fatal results of which in our public institutions are far greater than is usually believed.

G. W. N.

ART. XIII. *A Treatise on the Diseases and Injuries of the Larynx and Trachea. Founded on the Essay to which was adjudged the Jacksonian prize for 1835.*
By FREDERICK RYLAND, Surgeon to the Town Infirmary, Birmingham.
London: 1837. pp. 338.

There are certain parts of pathology which are to some degree neglected, either because they are rare, or are comparatively little connected with other affections. This has been the case with the diseases of the larynx, which are neither trifling in danger, nor so obscurely concealed as to elude ordinary observation. They are, notwithstanding, less known than many less important but more complicated maladies, and the science possesses few or no good monographs expressly devoted to this subject. It is to supply this deficiency that the work of Mr. Ryland was written, "with the hope that it may, at all events, excite more attention to these maladies than they have hitherto received; and that it may afford useful information to those who, from a different direction of their studies, may not have had the opportunity of making themselves sufficiently acquainted with this very important class of diseases."

The work is founded on the essay to which was adjudged the Jacksonian prize in 1835. The credentials of our author are limited to this essay, at least we do not remember to have previously met with any production of his pen. But he has brought to his task habits of skilful observation, and what is perhaps still more important, of critical and careful analysis of the facts already ascertained by previous observers. A work of this kind could scarcely have been prepared from the cases which are presented within the observation of a single individual but moderately advanced in age, however extensive his opportunities may have been; Mr. Ryland has, therefore, most properly not confined his observations to the cases which may have fallen under his care, though as surgeon to the town hospital of Birmingham these have been numerous.

The author is not styled doctor in medicine, but he obviously belongs to that numerous class who, in France and America, would have received this title, the more merited, as the practice of the author seems to be, at least, as much connected with medicine as with surgery. The work is a sufficient proof of the artificial nature of those arbitrary classifications of medical practitioners, which should never be carried further than is suggested to each individual by the natural bent of his character, or by the circumstances which may chance to favour his success in a particular department of his profession. It is a proof too, if any were needed, of the devotion to science which is displayed by a numerous class of practitioners, who are scattered throughout the provincial towns of England, and know how to profit by the ample stores of pathological facts which they gather amidst the numerous ailments incident to an impoverished manufacturing population.

The arrangement of the work is such as is naturally suggested in a treatise devoted to the diseases of a particular organ, and of course commences with acute inflammation of the larynx. The remarks on the necessity of vigorous treatment to arrest the inflammation of an organ, which is so essential to life, that a degree of thickening scarcely appreciable in other structures necessarily proves fatal, are judicious, but cannot add much to what we already are familiar with. If active blood-letting, followed by antimonials, and if time allows, by mercury, should fail, the operation of bronchotomy is advised without waiting for those imminent symptoms of danger which will almost always render it useless. Of six cases in which it was performed by himself or others, four recovered, and in the two others some temporary relief followed. Of twenty-eight cases which he has found recorded, ten recovered. But even this proportion may be exaggerated from the natural disposition felt by all men to pass lightly over their unsuccessful cases.

We are, however, by no means convinced of this conclusion of our author, as to the mortality, unless the term laryngitis should be restricted to the most violent cases of inflammation; for there are certainly lighter forms of acute irritation of the larynx, in which the ordinary symptoms of inflammation are sufficiently well marked for us to admit its existence, and which yield readily to treatment. But these are not cases in which the voice has become decidedly stridulous, or in which the respiration is very much impeded.

Œdema of the glottis is an inflammation of the submucous tissue of the upper part of the larynx, with but little affection of the mucous membrane. In addition to the ordinary signs of subacute inflammation, such as heat and stricture, the diagnosis may be rendered much more certain by holding the mouth open with a piece of wood introduced between the teeth, and then depressing the tongue, when two smooth tense tumours can often be detected just behind the epiglottis. The epiglottis itself does not usually present that erect tumefied aspect peculiar to acute laryngitis. Calomel, and blisters to the nape of the neck, with copious leeching over the larynx, are the remedies advised; if they fail, the operation of tracheotomy should not be delayed.

Erysipelas of the face may extend into the fauces and give rise to fatal laryngitis; but there is besides a form of idiopathic inflammation of the fauces and larynx which seems to be of the erysipelatous kind. It is most frequent in hospitals where erysipelas happens to prevail, and under these circumstances was several times observed at Birmingham. In this form of disease, the author rather objects to bleeding and depressing remedies, relying upon leeching and a blister to the upper part of the sternum or to the back of the neck. With these local remedies, general treatment of a tonic character, as quinine, wine, and good diet, may become necessary.

Chronic laryngitis is a more frequent affection than the acute forms of the disease already described. It is very often mortal; at least it is often the precursor of diseases which terminate in death. There is a subacute variety of laryngitis in which the symptoms are neither so violent nor so rapid as in the more severe forms, but which is important enough to attract the attention of physicians. This variety is rather overlooked by Mr. Ryland, but it has occurred to us within the last two years more frequently than any other form of laryngitis, and in several instances it proved fatal. Ulceration of the cartilages did not take place in these cases.

The true chronic laryngitis assumes different forms; in the slightest, there is a mere thickening and granular aspect of the mucous coat, which renders the voice harsh, but it is not injurious to the general health, except that it disposes to returns of the same disease. Sometimes the thickening of the mucous coat may extend to the formation of vegetations analogous to the mucous tissues, which cause some danger to the patient from the rapid closure of the larynx which may follow a very moderate attack of inflammation. Ulceration of the mucous coat is the variety which is most commonly associated with phthisis; it appears first in the mucous follicles, extending from thence to the coat of the tissue of the larynx. These ulcers may attack all parts of the larynx, and are extremely common about the vocal ends, when they destroy the voice, or at least render it hoarse and rough.

The ulcerative laryngitis scarcely ever occurs except from phthisis or syphilis. In the latter case the ulceration passes from the pharynx downwards towards the larynx. But in the phthisical varieties, the disease seems to begin in two ways. The tuberculous deposit may occur in the follicles of the larynx, and ulceration may follow by a progress similar to that which occurs in the follicles of the intestines. This undoubtedly happens in a certain proportion of cases of chronic laryngitis which terminate in phthisis and its usual tuberculous deposit in the lungs. The second variety is more frequent, that is, simple follicular inflammation of the larynx, arising from the ordinary causes of

inflammation, or produced in the latter stages of phthisis by the continual passage of the irritating matter of softened tubercle over the mucous coat. When it occurs towards the close of phthisis, we can readily foresee its cause and understand the difficulty of removing it; but we cannot determine why this chronic inflammation should so often appear as the first symptom of a series which terminate in tubercular disease of the lungs and death. The tubercles in the lungs are probably not present at the earlier stages of the laryngeal inflammation, at least we have the strongest possible evidence that such is not the case. In some patients there is a gradual extension of the irritation along the trachea until the symptoms of tubercles are developed in the chest, at the same time that soreness and pain are felt in that part of the trachea which lies beneath the sternum; in other cases, the pectoral symptoms begin at once, without apparent extension of the inflammation along the mucous coat. Whatever may be the particular course of the disease, the rule holds good that severe chronic inflammation of the larynx, if tolerably severe, is, in the immense majority of cases, a symptom of a form of tuberculous disease which, though slow, is of the most intractable nature.

This fatal law extends in some degree to those slighter forms of chronic disease in which the voice is roughened, but where there is neither pain nor oppression. Still the exceptions are the more numerous, and some patients pass through life without other signs of a tuberculous diathesis.

The cartilages of the larynx are occasionally affected with ulceration, constituting true laryngeal phthisis, and known by the local signs of irritation of the larynx and extreme fetor of the expectoration. Such cases generally pass into confirmed hectic, although the immediate cause of death is usually an attack of acute inflammation which closes up the orifice of the glottis.

Mr. Ryland gives two cases of simple chronic laryngitis followed by a cure. They were relieved by local treatment, but did not finally recover until a slight ptyalism was produced. We only regret that the proportion of cases of recovery where the symptoms were severe, is not given. We fear it would have been lamentably small. Ulceration occurring in chronic laryngitis is admitted by the author to be rare, except as a complication of phthisis, in which case it can only be treated by palliatives. When necrosis or ulceration has attacked the cartilage, a cure is nearly impracticable, but some relief may be obtained by the usual palliatives; in cases of a venereal origin, we may with propriety have recourse to mercury.

The affection of the throat so common in this country of late years, and especially frequent amongst clergymen, is not mentioned by Mr. Ryland. This variety usually begins in the pharynx and soft palate, and does not always extend to the larynx. When it is confined to the pharynx, there is merely a smooth shining redness of the mucous coat, and sometimes elongation of the uvula. If the disease should go no farther, the general health is but little affected, notwithstanding it may continue for years; but if the larynx and trachea be involved, pulmonary phthisis frequently ensues. This disease is extremely troublesome, interfering with the duties of clergymen, and sometimes permanently destroying their health. The mode of treatment generally adopted is the use of astringent gargles; sometimes stimulating, at other times mild mucilaginous applications, with various cutaneous external revulsives. The general treatment is limited to means calculated to increase the vigour of the constitution.

The observations of the author relative to croup are sound and clear: the plan of treatment consists in the usual combination of depletion with antimonials, external revulsives and mercurials. The latter are properly prescribed in the second stage of croup when the active inflammatory symptoms are succeeded by the secretion of false membrane. We agree with him that mischief is often done by injudicious blood-letting when the period of secretion has

occurred; especially in the pallid feeble children who are frequently the subjects of croup. Mr. Ryland refers the croupal sound to the presence of false membranes in the trachea, instead of the larynx, which opinion would seem to be proven by cases in which the disease was confined to the larynx. The voice was then stridulous and the respiration impeded, but the peculiar wheezing sound, characteristic of true croup, was not heard. The results given by M. Double, from an analysis of the cases reported by a great number of authors, would show that the mortality of croup has been steadily decreasing; though it still bears an immense proportion to the whole number of cases. Such analyses, however, are rather doubtful when applied to a disease of which the diagnosis is so difficult as croup, and which may so readily be confounded with spasmodic affections of the larynx. We believe, however, that the statement is correct when applied to the variety of croup which commences in the larynx and upper part of the trachea. But whether it is equally applicable to the more fatal and insidious variety in which the false membrane is chiefly developed in the bronchial tubes, may be doubtful. The operation of bronchotomy for the relief of croup is properly reprobated. We see no reason for its performance. No one dares to suggest it, except when all ordinary means have failed; and the fact of the very frequent existence of false membranes throughout the greater part of the bronchial tubes, is enough to show its inutility.

M. Bretonneau, of Tours, described some years since, an epidemic disease of the throat which occurred in that city, and was so similar to croup as to be considered by him identical with it. In this opinion most pathologists do not concur; they regard it as distinct from croup, both in its origin and progress, although in an *advanced* stage it is so analogous in results and pathological lesion as to differ but little from genuine croup. The cases described by Dr. Louis as croup in adults seem to have been of the same character as the diphtheritis of Bretonneau. The affection is usually epidemic, and is often associated with scarlatina; sometimes it is merely sporadic. Bretonneau regarded it as contagious. The affection commences with some of the general symptoms of inflammatory disease, and with soreness at the fauces; soon after a whitish coating of lymph may be detected on the pharynx, and sometimes on the tonsils and uvula. From thence it may extend to the larynx, and the usual symptoms of laryngitis supervene. General blood-letting was rarely borne in the epidemic at Tours; Bretonneau relies chiefly upon topical applications to the fauces, as powdered alum, muriatic acid applied by means of a sponge, or a solution of nitrate of silver. When the false membrane is destroyed by these means, the inflammation is usually checked in its progress, and prevented from extending towards the larynx.

Spasm of the glottis is a disease often confounded with croup, but distinguished from it by the suddenness of the attack, by the noisy croup-like inspiration, and by the short duration but frequent return of these paroxysms. It is the false croup of some authors, which is quickly relieved by antispasmodics or nauseating remedies. Mr. Ryland is inclined to the opinion of Dr. Ley, who refers it to the pressure on the recurrent laryngeal nerve by enlarged glands or other tumours. Thymic asthma is a modification of the same affection, arising from an enlargement of the thymus gland, and is much more intractable. The paroxysms of asthma are usually relieved by the warm bath, emetics, and bleeding. We must then, if possible, remove the cause of the disease. When this depends upon scrofulous enlargement of the glands of the neck, the remedies must of course be adapted to the treatment of scrofula.

The remainder of the work is devoted to the surgical affections of the larynx, to which little new is added. These lesions are better understood than other diseases of this organ which are strictly medical. They are treated in a manner highly creditable to the author, but do not require a particular analysis.

W. W. G.

ART. XIV. *Transactions of the Statistical Society of London.* Vol. I. Part 1. 4to., pp. 148. London: 1837.

The scope of inquiry embraced by the Statistical Society of London, comprehends the collection, concentration, and diffusion of statistical knowledge upon all subjects. The portion of the volume before us, contains observations and suggestions respecting many of the most important subjects which call for the attention of those administering the affairs of the British government. After this comes an *Analysis of the Statistical Documents respecting France*, by T. R. PRESTON, Assistant Secretary to the Society. Under the immediate superintendence of the French Minister of Commerce, the most elaborate and complete series of statistical publications are prepared, in conformity with the instructions of the Chamber. One of the individuals to whom the arduous task of compilation and arrangement is principally intrusted is M. Moreau de Jonnés, who stands in the foremost rank of statistical investigators.

The first general division and tables relate to the extent of territory and its physical and agricultural distributions. The second relates to the population, showing its distribution, &c. and is subdivided under the following heads:

I. General tables of the population, viz:—*a.* Former population, decennially from 1780 to 1831. *b.* Present population. *c.* Population stated according to the extent of territory in 1791, 1811, and 1831. *d.* Population stated according to the civil division of individuals. *e.* Population of cities and towns. *f.* Population stated by parishes (communes).

II. Movement of the population, viz:—*a.* Births, marriages, and deaths, in each of the departments. *b.* The same in the chief towns. *c.* Summary of the movement of the whole population. *d.* Foundling children.

The population as divided into classes, is as follows, according to the census of 1831, viz:

| | | | | |
|----------------|-------------------------|---|---|------------|
| Males. | Children and bachelors, | - | - | 8,866,422 |
| | Married, | - | - | 6,047,841 |
| | Widowers, | - | - | 722,611 |
| | Military, | - | - | 303,231 |
| | Total males, | - | - | 15,940,105 |
| | Children and spinsters, | - | - | 9,069,923 |
| | Married, | - | - | 6,056,836 |
| | Widows, | - | - | 1,502,359 |
| | Total females, | - | - | 16,629,118 |
| General total, | | | | 32,569,223 |

There is but little variation in the proportion of males to females in the different departments, the preponderance of females in the greater part of the eighty-six departments being nearly in the ratio represented in the above statement. In the few departments where the males predominate, the excess is very inconsiderable.

Among the new documents comprised in this section is an account of deserted and foundling children, which, the minister observes, “serves very advantageously to replace the many inexact and imperfect records serving heretofore as the basis of all the calculations that have been made on this most interesting subject.” The births from 1824 to 1832, including a period of nine years, were, in the whole country, including the capital,

| | <i>Legitimate.</i> | <i>Illegitimate.</i> | <i>Foundlings.</i> |
|-----------------|--------------------|----------------------|--------------------|
| Annual average, | 8,133,123 | 632,195 | 301,948 |
| | 903,680 | 70,244 | 33,549 |

In the department of Seine alone, which includes Paris, the proportions of the three classes differ considerably, being as follows:

| | <i>Legitimate.</i> | <i>Illegitimate.</i> | <i>Foundlings.</i> |
|-----------------|--------------------|----------------------|--------------------|
| Annual average, | 213,822 | 96,882 | 49,516 |
| | 23,758 | 10,765 | 5,502 |

From all which it appears that the proportion of the illegitimate to the legitimate births is, for the whole country, 1 to 13, whilst in the department in which Paris is situated it is as great as 1 to 2.2. So also, the proportion of foundlings, which in the whole country amounts to 1 in 20 of the whole number of births, in the department of Seine is as much as 1 in 7.27.

The term foundling is not employed synonymously with illegitimate, but is applied to children supported by the government, whether born in or out of wedlock. From the year 1824 to 1833, including a period of ten years, the whole number of foundlings was 1,192,043, averaging 119,204 per annum. The whole expense of maintaining them amounted to 97,775,613 francs, being an average of about 82 francs per year for each child. The tables furnish the following interesting facts in regard to the deserted foundlings during the decennial period last mentioned, with the expenses they have occasioned.

The number of foundlings in the hospitals, and houses dependent }
on them, at the commencement of the first year, 1824, was } 116,452

| | | | | | | | | | |
|-----------|---|--------------------|---|---|---|---|---------|---|---------|
| Admitted. | { | Males, | - | - | - | - | 141,354 | } | 336,297 |
| | | Females, | - | - | - | - | 137,138 | | |
| | | Sex not specified, | - | - | - | - | 57,806 | | |

| | | | | | |
|--------|---|---|---|---|---------|
| Total, | - | - | - | - | 452,749 |
|--------|---|---|---|---|---------|

| | | | | |
|-------------|---|---|---|--------|
| Discharged. | { | Children arrived at the age when they cease to be | } | 78,590 |
| | | chargeable to the hospitals, | | |

| | | | | |
|---|---|---|---|--------|
| Taken away by their parents or benefactors, | - | - | - | 46,025 |
|---|---|---|---|--------|

| | | | | | | | | |
|------|---|-------------------|---|---|---|---------|---|---------|
| Died | { | in the hospitals, | - | - | - | 46,755 | } | 198,505 |
| | | at nurse, | - | - | - | 151,750 | | |

| | | | | |
|--|---|---|---|---------|
| Remaining at the end of the last year, 1833, | - | - | - | 129,629 |
|--|---|---|---|---------|

| | | | | | |
|--------|---|---|---|---|---------|
| Total, | - | - | - | - | 452,749 |
|--------|---|---|---|---|---------|

| | | |
|---|-----------------|------------|
| Expenses of maintenance and keep of the children, | 88,132,712 frs. | 09 cent's. |
|---|-----------------|------------|

| | | | | | | |
|---------------------|---|---|---|---|-------------|------|
| All other expenses, | - | - | - | - | 9,642,900 " | 91 " |
|---------------------|---|---|---|---|-------------|------|

| | | | | |
|-------------------|---|---|--------------|------|
| Making a total of | - | - | 97,775,613 " | 00 " |
|-------------------|---|---|--------------|------|

Average for each child, 82 francs annually.

The mortality of the foundlings is startling, and in relation to this and other matters connected with the subject, much valuable information is to be obtained from the recent work of M. Quetelet, "Sur l'Homme."

In glancing over the tables exhibiting the particulars connected with the internal administration, we meet with the following details:

The number of hospitals and asylums in 1833, in the 86 departments, was 1,329, being an average of 15 in each department.

The total expenditure was 48,842,097 francs, 8 centimes: averaging for each establishment 36,751 frs. 1 cent.

The number of individuals receiving succour from the hospitals and asylums in the year 1833, may be ascertained from the following statement, viz:

| | | | |
|-------------------------------------|---|---|---------|
| Remaining on the 1st January, 1833, | - | - | 154,253 |
| Admitted during the year, | - | - | 425,049 |

| | | | |
|--------|---|---|---------|
| Total, | - | - | 579,302 |
|--------|---|---|---------|

| | | | | | | | |
|---------|---|----------------------------|---|---|---|---------|---|
| Removed | { | by death, | - | - | - | 45,303 | } |
| | | from cure or other causes, | - | - | - | 381,169 | |

| | | | |
|-------------|---|---|---------|
| Total left, | - | - | 426,472 |
|-------------|---|---|---------|

| | | | |
|--------------------------------|---|---|---------|
| Remaining 31st December, 1833, | - | - | 152,830 |
|--------------------------------|---|---|---------|

| | | | |
|--------|---|---|---------|
| Total, | - | - | 579,302 |
|--------|---|---|---------|

The number of "*Bureaux de Bienfaisance*," or Charitable Establishments for the Poor, was 6,275; the total expenses, 8,956,036 francs, 8 centimes.

The total number of individuals succoured at their dwellings was 695,932.

Cholera in England.—From the authentic reports relative to the progress of this epidemic in England, the following statistical facts are interesting. The reports were originally made to the Central Board of Health, and submitted to the Statistical Society by Sir DAVID BARRY, a member of the Board.

Of all the local Boards of Health which were established in Great Britain from the first communication of the existence of Epidemic Cholera in November, 1831, only forty-five sent in statistical returns to the Central Board. These returns comprehend a population of 840,666, of which were attacked 10,918, or one in 77. Of these there died 4,152, or about 2-5ths of the attacked. Of the attacked were, children under 10 years, 2,017; male adults, 4,374; female do. 4,527—10,918.

Died, children, 799; male adults, 1,630; female do. 1,723—4,152.

Treated in hospitals, 2,419; in patients' dwellings, 8,499—10,918.

Died, in hospitals, 1,137; in patients' dwellings, 3,015—4,151.

Classes attacked and dead.—Personal attendants on the sick:—attacked, 150; died, 58.

Washerwomen:—Attacked, 65; died, 36.

Medical Men:—Attacked, 30; died, 6.

Persons in easy circumstances:—Attacked, 442; died, 185.

Comparison of Ages and Sexes attacked and died.—*Age:*—Proportion of children to adults attacked, less than one child to four adults. *Sex:*—Male adults attacked to female ditto, 43 to 45.

Where treated.—Of the whole number attacked 1-4th were treated in hospitals, 3-4ths in their own dwellings.

Died.—Proportion of children to adults, died, one child to four adults. Died, in hospitals, of all ages and sexes, rather less than one-half of those admitted. Died, in patients' dwellings, 1-3d of those attacked. Deaths of male to female adults,—16 males to 17 females.

The total number of new cases in the whole of Great Britain, including the metropolis, was as follows, viz.:—New cases, 80,203; deaths, 30,927; which shows that about 3-8ths of those attacked by the disease perished.

The table exhibiting the progress of the epidemic in other parts of Great Britain than the metropolis, shows that, from November, 1831, to December, 1832, the total of new cases reported was 69,183, of which the deaths were 25,642; 2ndly. That the cholera attained its acme (London not included) in August, 1832, when the number of cases reported was 20,912; and deaths, 7,635; 3dly. That the new cases during the hottest months, viz.: July, August and September, were almost double those returned for the other eleven months, and nearly two-thirds of all that had occurred during the fourteen months mentioned; 4thly. That the deaths during the hot months were more than three-fifths of the whole number of deaths; 5thly. That the totals of the new cases and deaths, respectively, for the three coldest months, viz.: November and December of 1831, and December, 1832, were considerably less in number than the new cases and deaths of even the healthiest of the other eleven months.

In London, the disease prevailed as an epidemic, (with a short intermission in May,) during ten months of the year 1832, viz: from February 9th to December 31st. The number of cases reported was 11,020; and of deaths, 5,275. The cholera attained its acme in July, when the number of cases amounted to 3,027, and the deaths 1,362. The spread and fatality of the disease during the hot, the intermediate, and the cold months, stand nearly in the same proportions as in the other parts of Great Britain, where the disease prevailed.

Passing over two interesting papers, the one on the *Connexion between Crime and Ignorance*, by G. R. PORTER, Esq.; and the other on the *Increase of Wealth and Expenditure, in the various Classes of Society in the United Kingdom*, by

Colonel SYKES, we come to a most interesting statistical *View of the Births and Deaths in the Prussian States, in the fifteen years from 1820 to 1834*. This paper is compiled by M. HOFFMAN, Director of the Statistical Bureau of Berlin, and translated from the German by WALTER RUDING DEVERELL, Esq., Assistant Secretary.

In the Prussian States, (with the exception of Neufchatel, and the Principality of Lichtenberg, which were acquired only in the year 1834,) there were during the fifteen years mentioned:

| <i>Males.</i> | <i>Females.</i> | <i>Total.</i> |
|---------------|-----------------|---------------|
| 3,906,544 | 3,686,473 | 7,593,017 |

During the same period, there died:

| <i>Males.</i> | <i>Females.</i> | <i>Total.</i> |
|---------------|-----------------|---------------|
| 2,814,742 | 2,642,467 | 5,457,209 |

The whole period has been subdivided into five triennial periods, the average number of inhabitants for each being as follows:

| | | | | |
|-----------------|---|---|---|------------|
| 1820, 21 and 22 | - | - | - | 11,374,563 |
| 1823, 24 and 25 | - | - | - | 11,960,429 |
| 1826, 27 and 28 | - | - | - | 12,491,417 |
| 1829, 30 and 31 | - | - | - | 12,882,535 |
| 1832, 33 and 34 | - | - | - | 13,256,867 |

If we compare these numbers with those of births and deaths in the corresponding triennial periods, it will be seen that, on an average of 1,000,000 living contemporaneously, there were annually—

| <i>In the years</i> | <i>Born.</i> | <i>Died.</i> |
|---------------------|--------------|--------------|
| 1820-22 - - | 43,709 | - - 26,346 |
| 1823-25 - - | 42,576 | - - 26,888 |
| 1826-28 - - | 40,449 | - - 29,183 |
| 1829-31 - - | 38,380 | - - 32,127 |
| 1832-34 - - | 39,595 | - - 31,637 |

indicating a considerable *increase* in the proportional mortality, and a *decrease* in the births. The last triennial period is in both respects somewhat more favourable than the one immediately preceding.

In the years 1820 to 1822, there was, on an average, one born to very nearly 23 living; and there died one in nearly 38: but, in the years 1829 to 1831, there was, on an average, one born to 26 living; and there died one in something more than 31.

In the whole period of fifteen years, the excess of male over the female births has been never below 5.5-9 per cent., and once above 6.1-3 per cent. The total number of males and females, born in the period named, exhibits the proportion of 10,597 males to 10,000 females, so that, on an average, very nearly 106 males were born for 100 females. This ratio, therefore, somewhat transcends the commonly received proportion of 21 males to 20 females. The author of the paper observes, that the cause of the variation observed in the proportions for single years has hitherto not been ascertained; still, it would appear that this fact is not wholly assignable to mere accident. However, it is worthy of remark that, in the births *out of wedlock*, the excess of males above females is less than the births *in wedlock*. The number of births out of wedlock, in Prussia, in the fifteen years, was:—

| <i>Males.</i> | <i>Females.</i> | <i>Total.</i> |
|---------------|-----------------|---------------|
| 267,358 | 259,234 | 526,492 |

making an excess of males of only about half that observed, when the whole number of births are computed.

Another fact, no less worthy of observation, is the disproportion of sexes in the children of Jews, among whom (supposing the official reports correct) the excess of male children born is much larger than it is on the average of the whole number of births. In the fifteen years from 1820 to 1834, there were

born among this persuasion in the Prussian states,—males, 44,348; females, 39,877—total, 84,225 children: making an average of 11,121 males to 10,000 females, or an excess nearly double that, where all the births are reckoned together. In the single years the proportion varies considerably, the causes of which are not even surmised. This excess of males is not perhaps greater than what is observed in some portions of these United States of North America, and especially in the Western and South-Western States, in which we have shown, in this Journal for November, 1827, that the disparity subsisting between the boys and girls, even so late as the 10th year, is above eight per cent. in favour of the former. If the excess of males at the 10th year be so great, it must have been much greater at birth, and, in all probability, then equal to that of the Jewish persuasion in Prussia. But unfortunately we have no means of ascertaining the proportions of the sexes at birth in the rural portions of our country.

The births producing *two or more at once*, have been separately registered only since the year 1826, the following being the estimates for the nine years:

| <i>Births producing</i> | <i>Births producing</i> | <i>Births producing</i> | <i>Births producing</i> |
|-------------------------|-------------------------|-------------------------|-------------------------|
| 1. | 2. | 3. | 4. |
| 1,467,031 | 52,384 | 659 | 11 |

The number of children born was, therefore,—

| <i>Births.</i> | | <i>Children.</i> |
|-------------------------|---------|------------------|
| 4,467,031, producing 1, | - - - - | 4,467,031 |
| 52,384, „ 2, | - - - - | 104,768 |
| 659, „ 3, | - - - - | 1,977 |
| 11, „ 4, | - - - - | 44 |

Total, - - 4,520,085

4,573,820

An examination of the births of individual years shows a steady proportion in those, producing two or more at once, from which it seems probable that births of this class are induced by causes almost if not entirely, independent of fluctuating external influences. With regard to the increase of population, the births producing a plurality of children are of little importance, as the children they contribute to the whole number born, are only about 12 in 1,000; add to which their greater mortality in the first years of life.

In the nine years from 1826 to 1834, the births producing two at once gave,
17,327 pairs of males.
15,888 pairs of females.

Total, 33,215 pairs of similar sex.

Total twins born, 52,384

Thus nearly seven-elevenths of the whole were pairs of *like* sex, and four-elevenths only, pairs of *unlike* sex. It is, however, extremely curious to observe that the proportions of the two sexes differs but slightly from that presented by the total births, there having been born, on an average, for 10,000 females, 10,561 males.

Of the number of births producing triplets,

| | | |
|-----|---------------|-----------------------|
| 110 | produced each | 3 males. |
| 195 | „ „ | 2 males and 1 female. |
| 167 | „ „ | 1 male and 2 females. |
| 143 | „ „ | 3 females. |

And of 14 the sex of the children was not reported.

Total 659

Of the 645 births of triplets, of which the sex of the children was ascertained, 977 were males and 958 females, making a total of 1,935 children, the excess of males being a little under 2 per cent. or one-third of the general average.

The births producing four at once consisted of—

- 1 of 4 males.
- 1 of 3 males.
- 4 of 2 males and 2 females.
- 2 of 1 male and 3 females.
- 3 of 4 females.

11

These 11 births, therefore, produced 17 males and 27 females.

Although the number of births producing three and four children are too small to establish the truth of a natural law, they afford reason to believe that as the proportion of children at a birth exceed twins, the ratio in the excess of males is reduced, so that in the case of triplets it is only one-third of the general average, whilst in the case of four at a birth, the excess is on the side of the females.

We proceed next to the consideration of the interesting facts connected with the records of mortality and their analyses.

The total number of persons of all ages who died in the Prussian states, in fifteen years from 1820 to 1834, was, according to the official reports, 5,157,209, of which 2,814,712 were males, and 2,642,467 females.

Our author informs us that the age attained is, for the most part, correctly reported, except in cases where life has been protracted to *unusual* length. Among the uneducated classes very old people have, in most cases, forgotten the year of their birth; and the natural desire to attract notice, as instances of longevity, occasions exaggerated statements, when no one of about the same age is living in the neighbourhood who might exhibit the truth of the statement. Hence, then, greatly interesting as it is, for the promotion of the Natural History of Man, to register cases of extreme old age, the Statistical Bureau of Prussia does not insist upon any great exactitude in reporting the ages of those who have died beyond the 90th year; as inaccurate and uncertain information in such cases, can serve only to mislead and occasion fallacious conclusions.

From an examination of the table showing the ages at which the deaths occurred, it appears that there died before the completion of their—

| | | Males. | Females. | Total. |
|-----------------------------------|---|-----------|----------|-----------|
| 3d year, | - | 1,180,923 | 991,533 | 2,172,456 |
| 7th year, | - | 202,721 | 196,889 | 399,610 |
| 14th year, | - | 115,720 | 113,392 | 229,112 |
| 25th year, | - | 118,976 | 128,633 | 277,609 |
| 45th year, | - | 281,430 | 319,723 | 601,153 |
| 60th year, | - | 309,295 | 290,672 | 599,967 |
| 80th year, | - | 474,521 | 495,182 | 969,703 |
| After completing their 80th year, | - | 161,156 | 106,443 | 267,599 |

Total, as above. - 2,814,712 2,642,467 5,157,209

The whole number born dead, or which died in the birth, was—

| | | Males. | Females. | Total. |
|-----------------------|---|---------|----------|-----------|
| | - | 147,705 | 109,363 | 257,068 |
| Died in the 1st year, | - | 715,284 | 581,540 | 1,296,824 |
| “ 2nd and 3d year, | - | 317,934 | 300,630 | 618,564 |
| “ 4th and 5th year, | - | 129,390 | 125,919 | 255,309 |

Thus it appears that nearly two-fifths of all who died had not completed their third year, and that of the whole 7,593,017 children born in the fifteen years mentioned, there were above one-thirtieth born dead.

The male births were, - - 3,906,544

The females, - - 3,686,473

Of which were born dead,

| | | | | | |
|----------|---|---|---|---|---------|
| Males, | - | - | - | - | 147,705 |
| Females, | - | - | - | - | 109,363 |

Showing that there are only about 200 females born dead to 255 males. Even among the males who have survived the greater perils of parturition, the influence of the sufferings they have undergone remains for a long period apparent. Male children, our author observes, inasmuch as their sufferings have been greater, fall victims afterwards more easily than females to the numerous accidents to which the frail period of early childhood is especially liable.

The ratio of males to females dying after birth and before the end of the first year, is as 200 females to 232 males, a proportion smaller than among the dead born.

The excess of mortality among male children not only in the first year, but throughout many succeeding years, even so late as the 14th, seems to be ascribed, by our author, solely to the influence of the greater sufferings in birth. On this point we, however, think he is mistaken, in proof of which we beg leave to refer to some calculations formerly made by us with a view of tracing out the causes to which the greater mortality of male children is to be ascribed, and where we have demonstrated that they are most liable to death from all diseases of a highly inflammatory character.*

It appears from the statistical tables before us, that in the Prussian states, although the excess of male births amounts to about 6 per cent., yet in consequence of the greater mortality among the males, it has diminished at the end of the first year to 1 3-5ths per cent.

The numerical equality in the sexes at and near the age of puberty, notwithstanding the disparity between the males and females at birth, involves curious reflections in regard to the ordinations of nature. We have before shown that such an equality subsists in our own country, at least so far as the population of Philadelphia is concerned, although the excess of males born exceed the females more than 7 per cent., which is a much larger proportion than the general ratio in the Prussian states. It appears, too, that in our locality the excess of males is not reduced so rapidly, being at the age of five years 5 per cent., whereas in Prussia it is, as above stated, only 1 3-5ths per cent. at the end of the first year.†

The peculiar dangers to which women are subject from the immediate effects of parturition may be estimated from the following facts. Of 448,356 females who died in the Prussian states in the before-mentioned fifteen years, between the ages of 14 and 45, or the period of child-bearing, 70,215, or nearly *one-sixth*, died either immediately in the act of delivery or in the period of child-bed; and of the infants born, 1 in 108 at once cost the mother her life. Notwithstanding this peculiar source of mortality among females, the tables show that there was during the time mentioned, very nearly an equal number of each sex who died at an age of active life, between the 14th and 60th years; namely, of males 739,701; females 739,028. When, however, the periods embraced in the estimate are less, some striking disparities are observed between the ratios of deaths in the different sexes. Thus the deaths between the years of 20 and 25 were 81,096 males, and only 64,184 females. After this and between the ages of 25 and 45 the proportion of deaths is reversed, being 160,391 females to only 133,139 males. From the 46th to the 60th year the male majority is in the largest amount, but after the 60th year and to the latest stages of longevity, the proportion of female deaths is greatest. This, our author informs us, does not proceed from the less longevity of the women, but solely from the fact that from greater temperance in living or other causes, the number of females above 60 is larger than that of the males.

* See this Journal, No. XXXII., for Nov. 1835.

† See this Journal, for Nov., 1831—article Medical Statistics.

The census of the inhabitants shows the average proportions of each sex for the several years from 1819 to 1834, inclusive, at the several ages specified:

Class I.—Children to the completion of the 14th year.

| | <i>Males.</i> | <i>Females.</i> | <i>Excess of Males.</i> |
|----------------|---------------|-----------------|-------------------------|
| Average, - - - | 2,251,180 | 2,225,402 | 25,678 |

Class II.—Persons beyond the 14th, but not having completed the 60th year.

| | <i>Males.</i> | <i>Females.</i> | <i>Excess of Females.</i> |
|----------------|---------------|-----------------|---------------------------|
| Average, - - - | 3,522,523 | 3,614,806 | 92,283 |

Class III.—Persons beyond the 60th year of age.

| | <i>Males.</i> | <i>Females.</i> | <i>Excess of Females.</i> |
|----------------|---------------|-----------------|---------------------------|
| Average, - - - | 374,476 | 385,794 | 11,318 * |

Class IV.—Total of all ages.

| | <i>Males.</i> | <i>Females.</i> | <i>Excess of Females.</i> |
|----------------|---------------|-----------------|---------------------------|
| Average, - - - | 6,148,180 | 6,226,103 | 77,923 |

The author remarks, that the close approximation to a numerical equality of the sexes, which, in the war from 1806 to 1815, suffered great infraction, was gradually becoming restored by the natural course of births and deaths, when it was again interrupted by epidemic diseases in the last years, which affected much more destruction among the males than among the females.

The number of deaths ascribed to the mere infirmities of old age constitute nearly one-eighth of the whole mortality. Of those dying after the 60th year, nearly 9-16ths of the men, and as much as 3-5ths of the women are said to have died solely of old age.

Of those who died violent deaths from various accidents during the fifteen years, there were,—males, 69,517; females, 20,849—total, 90,366. Of these the suicides reported were 16,680, viz.: 13,699 males, and 2,981 females. Of the instances of violent death, one in 10 were males, and only one in 127 females.

Small Pox.—Among the various sources of mortality, it is particularly interesting to know the amount caused by small pox, the deaths reported from which, in the fifteen years, was no less than 44,699; those of males being 23,562; and of females, 21,137. The proportion from this disease is, therefore, one in 122 of those from all other sources. In the years 1832, 33 and 34, the proportion increased to 1 in 68 of the aggregate of deaths.

Unable at present to obtain a correct account of the destructive agency exercised by each separate form of disease, the Statistical Bureau of Prussia only presents the mortality from diseases under general divisions, from which it appears that there died during the fifteen years:

| | <i>Males.</i> | <i>Females.</i> | <i>Total.</i> |
|--------------------------------------|---------------|-----------------|---------------|
| From Internal Acute Diseases, - - - | 671,213 | 599,401 | 1,270,614 |
| „ Internal Chronic Diseases, - - | 1,058,144 | 1,012,144 | 2,070,288 |
| „ Suddenly Fatal Sickness, - - - | 217,206 | 179,651 | 396,860 |
| „ External Disorders and Injuries, - | 60,505 | 50,016 | 110,521 |
| „ Undefined Diseases, - - - - - | 245,913 | 221,334 | 470,247 |

The class of diseases which hence appears to have been much the most fruitful source of mortality, even to the extent of 38 per cent. of the whole, is that of *Internal Chronic Diseases*, which comprehends, according to the arrangement adopted in the tables, Intermittent and Irregular Hectic fevers, Hooping-cough, Convulsions, Colic, Gout, Hydrocephalus, Marasmus, Pulmonary Consumption, Dropsy, Asthma, Emphysema, Epilepsy, Constipation, and Mania.

The class of *Internal Inflammatory Diseases* is made to comprise Inflammatory Fever, Pneumonia, Inflammation of the Brain, Quinsy, Measles, Scarlet Fever, Miliaria and Purpura, Diarrhœa and Dysentery.

* In 1819 there was an excess of males amounting to 4,108.

The class of *External Diseases*, comprehends Phlegmon and Gangrene, Strangulated Hernia, Diseases of the Urinary Organs, Malignant Cancerous Ulcerations, the deaths from which present a still larger excess of males than the preceding class.

The number of deaths in the Prussian States, from Hydrophobia, during the nine years in which they have been accurately registered, viz: from 1826 to 1834, was 212 males, 208 females—in all 450.

The facts developed through the labours of the Prussian Statistical Bureau, are certainly of a highly interesting character, and we greatly regret the deficiency which exists in respect to designating those particular diseases most active in swelling the amount of mortality. G. E.

ART. XV. *A Letter respecting Santa Cruz as a Winter Residence for Invalids : addressed to Dr. John C. Warren, of Boston, Mass.* By JOSEPH TUCKERMAN. Boston: 1837. 8vo., pp. 27.

This letter, which was first published in the Boston Medical and Surgical Journal, and has since been issued in a pamphlet form, is an interesting one. The observations of the author, it is true, have not extended over a sufficiently long period, nor are the facts which he has collected either sufficiently numerous or precise, to afford us a satisfactory history of the climate of Santa Cruz, or to enable us to form a definite judgment of the value of this climate compared with that of other localities, in its influence over diseases. Nevertheless the details, as far as they go, seem to have been carefully collected and accord with what we have learned from other sources, especially from our lamented friend the late Dr. Godman, who spent a winter on the island.

The temperature of Santa Cruz, Mr. T. represents as generally a very grateful one to an invalid, and often even delicious. But the heat is sometimes debilitating; and is always too great for either much intellectual or physical effort. The temperature of the night is seldom below 70, except perhaps an hour before day, and Mr. T. never found the warmth so great as to interrupt sleep. He always, he says, slept with a window partly open, taking care that there should not be a current of air over the bed; and, except at the approach of morning, he seldom required more covering when in bed than a single sheet.

Mr. T. resided on the island from the 7th December, (1836,) to the 7th May, (1837,) and has given us a series of thermometrical observations, which he made during that period. From these it appears that the temperature is generally very equable, but on one occasion we observe that the variation was as great as $14\frac{1}{2}$ degrees between half-past six, A. M., and noon.

"It is, however," observes Mr. T., "worthy of observation, that very small changes, as indicated by the thermometer—for example, of three, four or five degrees—are scarcely less felt, and occasion a scarcely less uncomfortable state of feeling, than changes of eight, ten, or fifteen degrees, in our own climate. When the wind comes from the south east, the temperature is as delightful as can be conceived. This is the trade wind. But the wind is hardly less variable there than here. From the east it is even pleasant, and occasions no chill. But when it comes from the north, it is little less uncomfortable than is an east wind with us [in Boston] in July or August. Nor does it unfrequently blow from the north. Nor, when from this direction, is it less disagreeable to those who have been long in the island, and to creoles, than to strangers and invalids. Yet not much will be suffered from it by those who will be willing, during its continuance, to keep within their rooms, or to make the small change which will be required in their dress."

One of the most important advantages, however, of a mild climate, to an invalid, is, the opportunity it affords for exercise in the open air.

"It is," Mr. T. justly observes, "not the least interesting of the objects for which

an invalid leaves home for a warmer climate, that he hopes there freely to go abroad, and to see a softer sky than his own, and to breathe a milder air; and in a walk or a ride, or a drive, to enjoy the beauty of a tropical verdure; and, under all these influences, to feel an exhilaration of his spirits, and a renovation of strength, for which he could hardly have hoped in a confinement here of six months to his chamber."

These hopes, Mr. T. adds, may be realized in Santa Cruz. From about nine in the morning, however, until four in the evening, the heat is too great for outdoor exercise, but two hours exercise may be taken in the open air before breakfast by an early riser, and one hour before sunset. The invalid will find, however, that he can walk but little, and he must have at command a horse, a pony or a gig. These may be hired at reasonable prices. The roads throughout the island are highly favourable to the enjoyment of a ride or a drive, being good, and the scenery beautiful, particularly around West End.

The principal town on the island is Bassin, but invalids principally resort to West End, a small town about fourteen miles distant from the former. Mr. T. thinks, however, he should prefer Bassin as a residence, unless there should be a well situated and well kept boarding house established in the country. The rides about West End are the more agreeable, but the loss would be more than compensated for, he thinks, by the gain in respect to light and air, by residing at Bassin. There are several good boarding houses in both towns, and the price of boarding is reasonable, \$10 a week.

We must not conclude this brief notice without adverting to the author's warm expressions of gratitude to his physician, (Dr. J. C. Warren,) for his professional attentions. These acknowledgments are alike honourable to the heart of the author, and to the eminent physician to whom they are offered.

Mr. Tuckerman's letter may be consulted with advantage by invalids, who propose passing a winter in Santa Cruz, for the benefit of their health.

ART. XVI. *A Practical Treatise on the principal Diseases of the Lungs, considered especially in relation to the particular tissues affected.* By G. HUME WEATHERHEAD, M. D., Member of the Royal College of Physicians; Lecturer on the Principles and Practice of Medicine, and on Materia Medica and Therapeutics at the Blenheim Street School of Medicine, &c. John Churchill, London: 1837. 8vo., pp. 181. One coloured plate.

In the above work, containing less than two hundred pages, the author endeavours to give an account of the principal diseases of the lungs, their pathology, treatment, &c. He does not inform us for what class of readers his production is especially intended. If written for the use of medical students it seems to us that it treats too slightly of the symptoms and morbid appearances, whilst it abounds too much in doubtful explanations of the phenomena of disease and the *modus operandi* of remedies. On the other hand, it can hardly be supposed that the author had in view the instruction of his fellow practitioners, inasmuch as we cannot perceive that he has added any thing to the stock of knowledge which we already possess. He is evidently most grievously afflicted with the mania of explaining every thing, and the confidence with which he urges his *rationales* is truly astounding. Without detailing the history of a single case, or giving us any new facts which might throw light upon the diseases of which he treats, he merely traces a brief and very incomplete outline of their causes, symptoms, &c. the substance of which may be found in almost every other work on the same subject. The nature of the diseases, and the mode of production of the principal phenomena, &c. are then explained in a manner calculated to give us a most exalted idea of the simplicity, but not of the profundity, of our author's conceptions. The scantiness of the proofs by

which these explanations are supported, induces us to suppose that he looked upon them as almost self-evident propositions, which when once clearly announced must command universal credence.

Inasmuch, however, as the same views have been repeatedly expressed in a manner not materially differing from that of our author, without obtaining a general assent, it might have been well for the benefit of those who have been hitherto unable to appreciate their value, to have placed them in new points of view, or enforced them by additional arguments. Nothing of the kind, however, is discoverable.

It is really difficult to conceive of any useful purpose which a book, like the one before us, can serve. To students, the study of it would be injurious, because it would lead them to receive opinions for facts, and superficial generalizations for legitimate deductions, whilst at the same time it would tend to make them rest satisfied with the most scanty knowledge of the phenomena of disease. To the practitioner it would be useless, because it would teach him nothing new, and if perchance in perusing it, (which is not very probable,) he should meet with an idea which he did not recollect to have met with elsewhere, he would not find its truth supported by convincing evidence; and consequently if he were blessed with a sound and discriminating mind, he would pass it by as belonging to the thousand and one guesses, which abound so much in a certain class of medical productions, and which serve like a profusion of ornament or a holiday suit, to conceal from the eyes of the uninformed the poverty of the wearer.

T. S.

ART. XVII. *A Clinical Lecture on the Primary Treatment of Injuries, delivered at the New York Hospital, Nov. 22nd, 1837.* By ALEXANDER H. STEVENS, M. D., Surgeon to the New York Hospital and emeritus Professor of Clinical Surgery. New York: 1837. 8vo. pp. 34.

This though termed a clinical lecture cannot strictly be regarded as such. It, however, contains some sound advice relative to the primary treatment of injuries. The distinguished lecturer, reprobrates very justly the use of the lancet during the collapse from severe injuries, and indicates the proper course to be pursued in such cases. In noticing the writers who have treated on the subject, he might have referred to an excellent paper ("on the abuse of blood-letting in recent accidents,") by our colleague Dr. R. Coates, published in the *North American Medical and Surgical Journal*, Vol. I. p. 275, (for April, 1826.) We may notice a mark of inadvertence, in the repetition and in the same words at page 28, of the instructions relative to the method of inducing patients to swallow, given on page 23.

We propose to notice this lecture more particularly when we receive the remainder of the series of which this is the first.

ART. XVIII. *An Experimental Essay on the relative Physiological and Medicinal Properties of Iodine and its Compounds; being the Harveian Prize Dissertation for 1837.* By CHARLES COGSWELL, A. B., M. D., Member of the Royal College of Surgeons, &c. &c. Edinburgh: 1837.

This is a very elaborate and complete monograph; comprising not only a digested summary of what was known relative to the physiological and medicinal properties of iodine and its compounds, but also much new and valuable information derived from numerous experiments instituted by the author. It is an important contribution to therapeutics. We regret that our limits at present, restrict us to a mere notice of the work, but we shall take an early opportunity to enrich our pages by extracts from it.

ART. XIX. *Plates of the Cerebro Spinal Nerves, with references; for the use of Medical Students.* By PAUL B. GODDARD, M. D., Prosector of Anatomy in the University of Pennsylvania; Member of the Academy of Natural Sciences, of the Philadelphia Medical Society, &c. Philadelphia: J. G. Auner. 1837. 4to. pp. 60, and 12 plates.

This is a very useful book for medical students, and we ought at an earlier period to have invited attention to it; the omission to do so was purely accidental. There is no portion of our structure in the study of which the student encounters more difficulty, and none of which a thorough knowledge is more important than of the nervous system. To dissect these parts so as to study their course and relations, is a labour beyond the ability of most students, and yet to say nothing of this information being essential to all physiological knowledge—no one without possessing it can understand the pathology of many diseases or be a good practitioner. Dr. Goddard is, therefore, entitled to the gratitude of students for the assistance he has afforded them by his publication, in this important branch of their studies. It is true that similar ones were already extant, but they were either too expensive, or too imperfect. Dr. Goddard's plates, on the contrary, are sufficiently well executed and accurate, and at the same time afforded at a price which places them within the means of nearly every student.

ART. XX. *An Introductory Lecture to the course of Surgery, delivered to the Students of Washington Medical College, of Baltimore.*—By JOHN R. W. DUNBAR, M. D., &c. &c. Baltimore: 1837. 8vo., pp. 28.

The author of this lecture expresses some fears, and we think with much reason, that its publication will not be likely to gain him reputation as a writer. It is indeed deficient both in originality and good taste. But the Professor has exhibited himself to be so decided a ladies' man, devoting almost as much of his lecture to compliments to them, as to what may perhaps be considered the more legitimate objects of his professorship,—that we might incur some risk were we to indulge in criticism. We must venture, however, upon a single quotation; a precious morceau for any one who may be collecting examples of bathos.

After stating it to be his "advice always to devote much attention to the better portion of creation," and that he "should think it very *impolite* to go through a whole lecture, without noticing a large portion of his auditors,"—our gallant author exclaims:—

"Who is there that should be more willing to pay a just tribute to their merits than the physician? Have I not seen them submit with unflinching fortitude to the most terrible operations, such as the lords of creation would yell and groan most piteously at."

ART. XXI. *Introductory Lecture to the course of the Institutes of Medicine, delivered in the University of Pennsylvania, November 6th, 1837.* By SAMUEL JACKSON, M. D. Philadelphia: 1837. 8vo., pp. 30.

This, like every production of its author's pen, shows that he possesses no common mind. He has reflected much and well on medical subjects, and his views are never trite or superficial, but always striking and ingenious. In the present lecture he presents us with a clear and philosophical view of the nature and relations of our science, and we regret that we cannot transfer the whole

of his remarks to our pages; but the space at our command restricts us to the following observations.

"*Medicine is an art and a science.* It is an art, as from the necessary connexion and succession of the phenomena that occur in the actions of the animal economy, axioms can be established and practical rules can be laid down, applicable to a great extent in the treatment of disease, especially those of ordinary occurrence. In this character it is *empirical*. Let us be understood. There are different kinds of empiricism. Empiricism may be gross and vulgar, as it is presented in the rapacious and ignorant quack, who, with his nostrum, pretends to possess a cure for every malady; or, it is enlightened and intelligent, drawing its resources from the recorded observations of instructed and experienced physicians, whose lives have been devoted to the healing art. For the most part, with the knowledge we possess, medicine cannot rise to higher pretensions in its practice. Happily, in a vast proportion of diseases, the accumulated experience of the profession has discovered the characteristic signs by which most diseases may be known; the methods of treatment applicable to them; the kind of remedial actions that either favour the natural recuperative movements of the economy, or do not absolutely destroy them.

"Diseases, as respects their natural termination, may be thrown into three classes. 1st. Those in which the powers of the constitution are perfectly capable, aided or not by treatment, for the removal of the disease, and the recovery of the patient. Many cases of this class recover, though the patient by his folly, the physician by his ill-timed interference and remedies misapplied, are calculated to oppose it. Cases of this class furnish to ignorant pretenders the mass of their boasted cures.

"2nd. Those in which the unassisted powers of the constitution are, of themselves, inadequate to protect the organism from the ravages of disease. A judicious treatment and appropriate remedies, aiding and directing the efforts of the economy, regulated by the nature of the symptoms, and guided by reason and experience, are here interposed with the happiest results. It is in this class that learning, talent, skill, display their triumphs; that the *medical practitioner* stands unrivalled—the solace of the suffering—the hope of the despairing. It is for its important services in this class of diseases, that the *medical profession* must ever hold its elevated position in society, and be incorporated with its highest interests. In the calm or the steady breeze, the barque may be intrusted to a common steersman's hand; but in the fury of the storm, in difficult straits, and on unknown shores, it is the disciplined pilot, skilled in all the resources of his art, that can alone carry it safely through the conflict of elements in which it is involved, and the doubtful passes it encounters.

"3d. Those, that from the exhaustion of the constitution, its original feebleness, or the intensity and violence, or the peculiar character of the disease, a fatal result must ensue. Medicine may oppose a resistance; it may delay, it may palliate, it may alleviate, but for a cure it has no power. *The victim must fulfil his destiny.*

"Medicine, cultivated as an art, can never reach beyond a certain degree of perfection. From the complication and mutability of the organic phenomena, numerous exceptions are constantly arising, to which experience and established rules of practice cannot apply. They stand isolated. Nosology has no niche in which they can be placed. Experience has stored up no remedy that has been prescribed. To every physician of extended practice, such cases are of almost daily occurrence. In these circumstances it is that science is indispensable; that principles in medicine can alone be relied on. Like the compass directing the mariner over the trackless deep, they will guide him to his object with certainty and success.

"That medicine is a science, as well as an art, admits of no doubt. That it is capable of principles to be relied on, and of explaining the production of phenomena, who will question? But where are we to look for those principles; what is the character of this science? It is in the study of organization, human and comparative, the analytical study and examination of all organic phenomena, with their arrangement according to the especial class to which they belong, from which will spring forth the philosophy of medicine in the vigour and beauty and excellence of truth."

QUARTERLY PERISCOPE.

FOREIGN INTELLIGENCE.

SPECIAL ANATOMY.

1. *Malformation of the Heart*.—Professor HOLST, in a recent number of *Hufeland's Journal*, (Jan. 1837,) records a remarkable example of this which he met with in a child who enjoyed perfectly good health until she was two years old, when her skin began to become blue, especially at the parts most distant from the heart. She then experienced feelings of suffocation, giddiness, and spasms. These attacks were usually followed by sleep, after which the blueness of the skin was less. Violent palpitations of the heart, with difficulty of breathing, coldness, and frequent hæmorrhage from the nose, gradually succeeded; and though their frequency diminished, yet their violence and duration gradually increased. During the paroxysms, the left side became colder than the right, and the pulsations of the arteries at the wrist of the left arm could not be felt. She died suffocated in one of these paroxysms.

The following were the chief results of the *post-mortem* examination:

The heart was very large, and its right side was larger than its left. There was a communication between the two auricles, not only by the foramen ovale, which remained open, but also by an abnormal opening. The aorta and the pulmonary artery arose from the right ventricle. These arteries and all the others were smaller than natural. The lungs were remarkably small, and the thymus gland was unusually enlarged.

From the above arrangement of parts, it follows that there must have been a mixture of the venous and the arterial blood. As, therefore, the blood received by the lungs was partly venous and partly arterial, and the calibre of the pulmonary artery was small, the imperfect developement of the lungs is accounted for. The large size of the veins and the venous nature of the blood depended on the double communication between the cavities of the heart and on the mixture of the two kinds of blood. The large size of the thymus gland is curious; for its enlargement is always found to accompany the permanent openness of the foramen ovale.

The left subclavian artery arose from the upper angle of a triangular sac, into the two other corners of which opened the left vertebral artery and an abnormal canal, occupying probably the place of the passage of the foramen ovale. By this last the subclavian artery was in communication with the left branch of the pulmonary, but as this canal was very small but little blood could enter into the subclavian artery. It seems to have received most of its blood from the left vertebral; so that the blood, in getting from the aorta to the left subclavian, must have passed through the carotids and the circle of Willis. This descending

current would meet the opposite one coming through the abnormal canal, and the resistance between the two columns probably caused the triangular dilatation above alluded to. It accounts for the difficulty in the blood's reaching the left brachial artery, and for the cessation of the beating of the pulse and of the diminished temperature of the left arm.

2. *Preservation of dead bodies for dissection.*—The Academy of Sciences of France, has awarded a prize of 800 francs to M. GANNAL, for his method of preserving bodies for dissection. The process consists simply in injecting an aqueous solution of an aluminous salt by one of the carotids: some pints are sufficient; after it the body may be preserved exposed to the air for a long time without putrefaction, and sometimes at last dries, and is mummified. He uses acetate of alum, prepared from the acetate of lead and sulphate of alum and potash; and five or six pints, of a strength that will mark 18° on Beaume's areometer, (equal to a specific gravity of about 1.140,) are sufficient to preserve a body for five or six months.

He has also used simple sulphate of alum for procuring the acetate. With one kilogramme of common sulphate of alum, in lumps, 250 grains of acetate of lead, and two pints of water, a mixture may be obtained sufficient to preserve a body four months; or common sulphate of alum alone will make one keep for two months.

The Commission has reported not only according to what it had itself seen, but has taken the opinion of persons better practised in such things than themselves; and the answer was unanimous, that by the proceeding above mentioned, bodies may be preserved, without smelling, for a month, six weeks, or more, according to their previous condition, the state of the atmosphere, &c.; and that consequently this is a discovery of considerable importance to those engaged in dissecting, removing entirely all that is disagreeable in that study, and all that is perhaps insalubrious, and enabling them to prolong with safety their dissections of the more minute parts.—*London Med. Gaz.*, Sept. 1837.

GENERAL ANATOMY AND PHYSIOLOGY.

3. *Existence of Germs in the Fetus.*—M. CARUS communicated to the Royal Academy of Sciences of France, at their session on the 7th of August last, the results of his investigations for the determination of the period at which the ova may first be found in the ovaries of mammalia in general, and of the human species in particular.

He has especially examined the ovaries of newly-born calves; and he has advantageously employed with his microscope the *compressorium* of Valentin and Wagner.

In the calf, immediately after birth, he has succeeded not only in extracting completely the whole Graafian vesicle, but also, by tearing this cautiously asunder under the microscope, he has found the little ovum itself swimming in the discus proligerus, in the midst of the granular liquid which the vesicle contains. The little ovum thus demonstrated, shows very distinctly the chorion, the yolk, and the primary vesicle with its germinal spot, just like (except as regards size) the ovum removed from the vesicle of the cow.

Last spring the author extended his observations to the human species. He could not discover the Graafian vesicle with the liquid surrounding the ovum in the ovary of a female infant, which died four hours after birth; but by cutting thin slices of the ovary, and slightly pressing them beneath the microscope, ova were very distinctly seen, perfectly indicated by the vitellus and the primary vesicle, and still closely enveloped by the substance of the Graafian vesicle and the ovary.

It was quite different with the ovary of a female child, eighteen months old. Here several vesicles of a quarter or even half a line in diameter were seen; and though the child had suffered from rickets, and there was sanguineous infiltration of the uterus and the ovary, and even a little blood had penetrated into the liquid of some of the vesicles, and had dissolved the little ovum, yet in one of the largest it was found distinctly formed, while others presented only the whitish circle of

albumen, with the vitelline membrane and the chorion, and the substance of the vitellus distinguished towards the discus proligerus by its fine globules, though the line of demarcation was not everywhere regularly traced.

In the ovaries of a child of 4½ years old, the same objects had a greater development. Here each ovary contained a Graafian vesicle, completely developed, of a diameter of six-eighths of a line. After both had been removed and torn under the microscope, there issued from each an ovum of the diameter of one-twelfth of a line (Vienna measure,) with the vitellus, the primitive vesicle, and its germinal spot, all perfectly marked, swimming in the liquid, which contained besides some globules. There was also, in the substance of the ovaries, a number of little ova of greater or less size, of diameters of one-sixtieth, one-twentieth, or even one-fourteenth, of a line, all still closely enveloped in their vesicles.

It results from these observations that, 1st. The ova, those germs of the future existence of men, are formed before the birth of the female individual, so that, towards the end of gestation with a female fœtus, three generations incontestably exist in a single individual. 2nd. Early after the birth of the female, and at least from the first year of her life, there are developed round several of the ova the vesicles or follicles of the ovary, so that the coverings of such an ovule are already essentially the same as at the time of puberty. 3d. When, by the enlargement of the vesicle, and the effusion of the liquid, the mature ovum is more isolated from the substance of the maternal organs, it remains in a state of latent life for a greater or less number of years, till, by the act of fecundation, it is drawn from this dependent state to a further development.

It results further, adds M. Carus, that when we wish to enumerate all the periods of human life, we must proceed nearly as for the vital periods of the insect, in which we distinguish the ovular life, that of the larva and chrysalis; and that of the perfect insect.—*Gazette Médicale de Paris*, Aug. 12, 1837.

4. *Five children at a Birth.*—It is stated in *Kleinert's Repertorium*, that on the 22nd May, 1836, the wife of a labourer in Petersburg was delivered of five girls; and that four of them were alive and perfectly well.

5. *Causes of erection of the Penis.*—KRAUSE thinks that this phenomenon is not sufficiently explained by the active pouring of blood by the helicine arteries into the great venous cells, as demonstrated by Müller; for he finds that it is not possible, by injecting thin fluids, to give the penis the degree of firmness and tension which it has in complete erection during life, unless the venous trunks at its root, or in the pelvis, be accurately compressed to prevent the injection passing out of them as fast as it is thrown into the arteries. He considers, therefore, that some plan must exist by which a similar retardation of the exit of the blood is effected during life; and this he thinks is the office of the musculi ischio-cavernosi and bulbo-cavernosi,—the ischio-cavernosus of each side arising from the inner side of the ramus of the ischium and os pubis immediately over the crus penis, round whose under and outer surface it winds, and inserted in part into the fibrous covering of the penis, and in part by a thin aponeurosis in the back of the penis, and into the ligamentum suspensorium, meets the aponeurosis of that of the opposite side over the vena dorsalis penis, and by the attachment of its edges to the fascial covering of the penis serves to maintain that tense. By this winding course these muscles are able in their contractions to compress all the deep veins of the corpus cavernosum in the crura penis against the rami of the ischia and ossa pubis, and by the firmly fixed aponeuroses meeting in the median line the vena dorsalis penis.

The bulbo-cavernosi, by their contraction, have, it is probable, a similar power of compressing the veins of the corpus spongiosum urethræ. Under the influence of peculiar excitement, these muscles enter into a kind of tonic spasm or involuntary contraction, at the same time that the increased activity of the flow of blood in the helicine arteries takes place; and both these circumstances are necessary to complete erection. In very young children, and even in new-born infants, erection may take place, and they are found to have both helicine arteries and well-developed cavernous muscles; but in old men, in whom it occurs very rarely and insufficiently, the musculi ischio-cavernosi are thin and pale, or almost en-

tirely tendinous, though the helicine arteries are still perfect.—*London Medical Gazette* for August, 1837, and *Müller's Archiv. H. 1.* 1837.

6. *Second Report of the Sub-Committee, appointed by the British Association to investigate the motions and sounds of the Heart.* This was read by Dr. CHARLES WILLIAMS.—Before describing their last investigations, the committee stated that they had found frequent opportunities of confirming the conclusions of their former researches on the natural sounds of the heart; and these conclusions not having been shaken by any subsequent experiment, or well-founded objection, the committee consider them established; viz: that the first sound of the heart is *essentially* caused by the sudden and forcible tightening of the muscular fibres of the ventricles when they contract; and that the second sound essentially depends on the reaction of the arterial columns of blood on the semi-lunar valves of the arterial orifices, at the moment of the ventricular diastole. Certain other circumstances were stated, as being capable of adding to or modifying these sounds.

The chief subjects of their present inquiry were, the unnatural, or morbid sounds, sometimes heard in the heart and arteries; and in investigating the causes of these sounds, which Laennec compared to blowing, filing, sawing, purring, and cooing, or musical sounds, they sought to determine, 1st, What is the essential physical cause of these sounds; and 2nd, in what manner disease can develop this physical cause: a correct answer to these inquiries would determine the value of these sounds as signs of disease.

The committee found that they could produce precisely the same sounds in every variety by impelling, in various modes and degrees, a current of water through Indian rubber tubes; and by numerous experiments, they ascertained the relations which the character of these sounds bore to the nature of the impediment, and to the force of the current. They obtained similar results on experimenting on the arteries of living animals; and discovered, that in the human subject the same sounds may be produced by simple pressure, not only in the arteries, but in the veins also. They found that the sounds heard in the neck, described by some eminent French writers under the names "bruit de diable" and "bruit de mouche," as signs of a particular morbid condition, which requires the use of certain remedies, may be produced at will, by the pressure of the stethoscope on the jugular veins of the healthiest persons; and is, therefore, not necessarily a sign of disease, but has probably been accidentally caused by the same pressure, in many cases in which it has been considered as a morbid sign.

The committee conclude, in answer to the first inquiry, that a certain resistance to a moving current is the essential physical cause of all the various sounds in question, and that this resistance is generally given by some pressure on, or impediment in, the tube through which the current moves; but that sometimes the resistance is caused by a change in the direction of the current, by which it is made to impinge on the walls of the vessel which contains it.

The second inquiry the committee think can be fully answered only by extensive clinical and pathological observation, with due regard to the previous investigations; but they have planned some experiments that promise to elucidate certain obscure points of the pathology and diagnosis of diseases of the heart and arteries, the knowledge of which would be of direct practical advantage. These points the committee propose to investigate if the association think fit to re-appoint them to this office.—*Lond. Med. Gaz.*, Sept. 1836.

7. *Experimental Investigation into the Glosso-pharyngeal, Pneumogastric, and Spinal accessory Nerves.*—This is the title of a paper read before the Medical Section of the British Association, at their late meeting in Liverpool, by Dr. JOHN REM. This paper embraces the principal results deduced by the author from an extensive series of experiments, performed by himself, upon those complicated and important nerves generally included under the eighth pair.

Glosso-pharyngeal.—The experiments on this nerve were all performed on dogs, and were twenty-seven in number. Seventeen of these were for the purpose of ascertaining if it was to be considered a nerve both of sensation and motion, and what were the effects of its section upon the associated movements of deglutition and on the sense of taste. The other ten were performed on animals immediately after they had been deprived of sensation, with the view of satisfying himself

more thoroughly how far it is to be considered a motor nerve. The most remarkable effect witnessed in these experiments was an extensive convulsive movement of the muscles of the throat and lower part of the face, on irritating this nerve in the living animal, provided the irritation was applied to the trunk of the nerve before it had given off its pharyngeal branches, or was applied to one of the pharyngeal branches separately. These movements were equally well marked when the nerve was cut across at its exit from the cranium and its cranial end irritated, as when the trunk of the nerve and all its branches were entire. The conclusions drawn from a review of the whole experiments were these:—That this is a nerve of common sensation. That mechanical or chemical irritation of this nerve before it has given off its pharyngeal branches, or of any of these branches individually, is followed by extensive muscular movements of the throat and lower part of the face. That the muscular movements thus excited, depend not upon any influence extending downwards, along the branches of this nerve to the muscles moved, but upon a reflex action transmitted through the central organs of the nervous system. That these pharyngeal branches of the glosso-pharyngeal nerve possess endowments connected with the peculiar sensations of the mucous membrane upon which they are distributed, though we cannot pretend to speak positively in what these consist. That this cannot be the sole nerve upon which all these sensations depend, since the perfect division of the trunk on both sides, if care be taken to exclude the pharyngeal branch of the par vagum, which lies in close contact with it, does not interfere with the perfect performance of the *function of deglutition*. That mechanical or chemical irritation of the nerve immediately after an animal has been killed, is not followed by any muscular movements, provided that care be taken to insulate it from the pharyngeal branch of the par vagum; and here, again, an important difference between the movements excited by irritation of the glosso-pharyngeal and those of the motor nerve is observed, for, while movements produced by the irritation of a motor nerve, such as the pharyngeal branch of the par vagum, continue for some time after the functions of the central organs of the nervous system have ceased, those from irritation of the glosso-pharyngeal are arrested as soon as all decided marks of sensation disappear. That the sense of taste is sufficiently acute after the perfect section of the nerve on both sides, to enable the animal readily to recognise bitter substances. That it may probably participate with other nerves in the performance of the function of the sense of taste, but it certainly is not the special nerve of that sense. That the *sense of thirst* does not depend entirely upon this nerve.

Pneumogastric or Par Vagum Nerve.—From the results of thirty experiments upon the par vagum, he is convinced that severe indications of suffering are induced by pinching, cutting, or even stretching this nerve, in almost all those animals operated on. In several experiments, in which the trunk of the par vagum was compressed by the forceps for a few moments, it was observed that in some of these cases powerful respiratory movements were thus produced, and were followed by struggles, yet no tendency to cough, and no act of deglutition which could be fairly attributed to this cause.

Pharyngeal Branches of Par Vagum.—From seventeen experiments performed on dogs, either when alive or immediately after being deprived of sensation, he concludes that these are the motor nerves of the constrictors of the pharynx, the stylo-pharyngeus, and palatine muscles; and that the sensitive filaments of these nerves must be comparatively few, if, under ordinary circumstances, they exist at all. Section of the pharyngeal branch of the par vagum on both sides, was followed by very considerable difficulty of deglutition, in which the food appears to be forced through the passive bag of the pharynx by the powerful movements of the tongue, and of the muscles which move the hyoid bone and larynx.

Laryngeal Branches of the Par Vagum.—On irritating the superior laryngeal nerve by galvanism, or by pinching it with the forceps, when the glottis was exposed to view, no movement of the muscles which dilate or contract the aperture of the glottis is observed. Upon looking at the anterior part of the larynx, upon which the external laryngeal branch of this nerve is chiefly distributed, vigorous contractions of the cricothyroid muscle, by which the cricoid cartilage is approximated to the thyroid, were always seen. On irritating the inferior laryngeal, obvious movements of the muscles which dilate and enlarge the aperture of the glottis followed. In some cases these movements were very vigorous,

and it was observed that these did not produce an enlargement of the glottis, but, on the other hand, the arytenoid cartilages were approximated, so as in some cases to shut completely the aperture of the glottis. It was also distinctly observed, that the only outward movements of the arytenoid cartilages were merely produced by their return to their former position, after they had been carried inwards.

From these experiments it was concluded, that all the muscles which move the arytenoid cartilages receive their motor filaments from the inferior laryngeal or recurrent nerves; and as the force of the muscles which shut the glottis preponderates over that of those which dilate it, so the arytenoid cartilages are carried inwards, when all the filaments of one or both of these nerves are irritated.

These experiments also show us, that one only of the intrinsic muscles of the larynx receives its motor filaments from the superior laryngeal, viz: the crico-thyroid muscle, and that, consequently, the only change which the nerve can produce on the larynx as a motor nerve, is that of approximating the cricoid cartilage to the thyroid; in other words, of shortening the larynx. We shall see how far this view is supported by the subsequent experiments upon the living animal.

The superior laryngeal nerve was cut on both sides in two dogs and one rabbit, and these animals readily swallowed both solids and fluids, without exciting cough or the least difficulty of breathing. The lungs of these animals were carefully examined after death, and none of the food taken could be detected in the air-tubes. In several animals the superior laryngeals were first cut, and the inferior laryngeals immediately afterwards; and it was ascertained that the previous division of the superior laryngeal did not prevent the difficult breathing, and symptoms of suffocation, which not unfrequently follow the division of the inferior laryngeal nerves, especially in young animals.

To procure still more positive assurance of the effect of section of the different laryngeal nerves upon the movements of the glottis, these four nerves were exposed in a full-grown cat, and the larynx was then dissected out, and brought forward, without disturbing the nerves. After watching for a little the vigorous movements of the muscles of the glottis, seen during the struggles, crying, and increased respiratory movements of the animal, the inferior laryngeal were then cut across, and instantly all the movements of the muscles of the glottis ceased, and the arytenoid cartilages assumed the position in which they are found after death. The superior laryngeals were then cut, without effecting the slightest enlargement, or any other change, upon the glottis. As the arytenoid cartilages were now mechanically carried slightly inwards during the rushing of the air through the diminished aperture of the glottis in inspiration, by which this aperture was still farther contracted, its edges were kept apart with the forceps until an opening was made into the trachea to prevent the immediate suffocation of the animal.

The glottis was brought into view upon another cat, as in the preceding experiment, and the motion of the muscles of the glottis were again watched for a short time. The superior laryngeals were then cut, without diminishing in the least any of the movements of the arytenoid cartilages. The sides of the glottis were approximated, as in crying, so as to form but a narrow fissure; and in struggling the aperture became completely closed, in the same manner as when the superior laryngeal nerves were uninjured. It must be at once obvious, that these experiments are completely subversive of the statement that the inferior laryngeal supplies those muscles only which open the glottis, while the superior laryngeal nerves furnish the motor filaments to those muscles which shut the glottis; they also illustrate, in a very satisfactory manner, the cause of the dyspnoea in some cases where the inferior laryngeal nerves are cut or compressed.

Dr. Reid has also satisfied himself, that when any irritation is applied to the mucous membrane of the larynx in the natural state, that this does not excite the contraction of these muscles by acting directly upon them through the mucous membrane, but that this contraction takes place by a reflex action, in the performance of which the superior laryngeal nerve is the sensitive, and the inferior laryngeal is the motor nerve. He has also satisfied himself that the muscular contractions of the oesophagus are not called into action by the ingesta acting directly as an excitant upon the muscular fibre through the mucous membrane, but by a

reflex action, part of the œsophageal filaments acting as sensitive, and others as motor nerves.

Spinal Accessory.—In seven dogs this nerve was cut on one side, without affecting the ordinary voluntary movements of that side of the neck. In several animals a weak dose of prussic acid was given after the nerve had been cut on one side. In several cases this was followed by prolonged, forcible, and regular respiratory movements, after the animal had been deprived of all consciousness and voluntary motion. In three of these cases distinct movements of contraction and relaxation were observed in the exposed sternomastoid muscles, synchronous with the other muscles of respiration. The contractions were perhaps weaker on the side on which the spinal accessory had been cut.—*Ibid.*

PATHOLOGICAL ANATOMY AND GENERAL PATHOLOGY.

8. *Metastasis of the lacteal secretion.*—Drs. E. GRAEFE and HIRSCHL report, in *Hufeland and Osann's Journal*, for 1836, two very remarkable cases in which the secretion of milk in the breasts suddenly ceased, followed by tumours at the knees. In both patients fluctuation was soon manifest, and an opening into the tumour gave issue to a large quantity of pure milk.

Prof. FLEISCHMAN relates, in the same *Journal*, the case of a young, healthy country girl, who the sixth day after delivery, suffered from a fright, which was followed by a chill, lassitude, pain in the head, and, after a few hours, loss of milk and violent delirium. Some hours after this, she was attacked with repeated sneezing, and a jet of milk, as large as a straw, was discharged from her right nostril. On this discharge being established the delirium began to diminish, her reason soon returned, she fell into a sound sleep, accompanied with perspiration; her breasts then filled with milk, and her health was re-established.—*Gaz. Med.*, Jan. 7, 1837.

9. *Vicarious urinary discharge.*—In our first number, (November, 1827,) two very extraordinary cases of vicarious urinary discharge were recorded, one by Dr. ARNOLD, of Providence; the other by Dr. SENTER. In the *Gazette Médicale de Paris* of Sept. 17, 1836, there is an account, by Dr. Lynker, of Pyrmont, extracted from a German journal, (*Wissenschaftliche ann. der gesammte Heilkunde*,) of a case similar in many respects to those to which we have just referred.

The subject of this last case was a woman, 24 years of age, who had menstruated, though with pain, since her 13th year, and had been subject from infancy to cramps, which produced a contraction of her lower limbs. In the summer of 1831, she had a fall on the front of her head, which stunned her for some minutes. For this she was bled by a drunken barber, four pounds, which produced extreme prostration, accompanied with spasms, sometimes tonic, at others clonic. A long time elapsed before she recovered her strength, and there remained a fixed pain in her forehead on the spot struck in her fall. In the autumn of 1833, she again suffered from spasms, which were followed by paralysis of her two extremities, (which two, we are not informed).

Many remedies were fruitlessly resorted to: the patient was attacked with abdominal typhus. The paralysis ultimately was cured by moxas. In consequence of mental emotion, the spasms suddenly returned and with great violence; at this period the phenomena presented themselves which render this case so remarkable.

The patient experienced, periodically, a painful stricture each side of the lumbar vertebræ, along the course of the ureters, sometimes more towards the kidneys, at others nearer to the bladder. Subsequently she complained of a violent heat in the abdomen, which was distended and very sensible to pressure. She had great thirst, sometimes chills, at others flushes of heat, anxiety, sleep disturbed by dreams, pulse small, feeble, irregular; impatience; obstinate constipation. Her condition daily became worse; her abdomen increased in size; vomiting supervened, and finally she discharged from her stomach a quantity of thin, clear, yellowish fluid, of a slightly urinous smell, after which she felt somewhat relieved. From the first appearance of these symptoms the patient had not passed a drop of urine by the ordinary passage,

although she at the time experienced a desire to do so. The bladder was not distended, and a catheter being introduced, a small quantity only of urine, as clear as water, and almost inodorous, was discharged. The spasms were slightly relieved by the administration of antispasmodics, followed by diuretics, warm bath, &c. When this dysuria had continued fifteen days, the condition of the patient remaining the same, some of the symptoms even aggravated, especially the vomiting, the patient complained of a continual pain in the axilla and the two mamma, and these parts evidently increased in size; the lactiferous vessels were tumid; this was followed by pains down the back, frequent chills, &c.; in general all the symptoms of milk fever. After a few days, a great quantity of colourless fluid, and of an urinous odour, was discharged from the mammæ, followed almost instantaneously with relief of all the symptoms. After continuing two days this discharge ceased suddenly, and appeared from the umbilicus; after continuing some hours it again ceased, and appeared anew from the thighs. It continued but a short time from this last place, and did not recur there; but appeared alternately from the mammæ and umbilicus, principally, however, from the former. During this period no urine was passed per viam naturalem, and but a few drops were brought away by the catheter. After this state of things had continued for several days acute pain was experienced in the abdomen, and a tumour suddenly appeared in the region of the bladder, and the patient passed, per urethram, seven pots of turbid urine, and twelve hours afterwards four pots more.

From this moment the patient was relieved from all her painful symptoms.

Subsequently this patient suffered from tænia, and was attacked with various nervous symptoms, and a bloody fluid was discharged alternately from her mammæ and umbilicus, sometimes copiously. This discharge almost always immediately followed or preceded the menstrual flow.

10. *Fibrous Tumour weighing one hundred and twenty pounds, developed in the Abdomen.*—The subject of this rare case, was a gentleman 58 years of age, of remarkably muscular frame and robust constitution; accustomed to much exercise in walking, and who had always enjoyed excellent health. In 1833, after an attack of hemorrhoids, which were promptly cured by astringents, his abdomen began to enlarge, without, however, producing any greater inconvenience than that arising from its weight. In December, 1835, his abdomen had increased so much as to exceedingly restrict him in his accustomed exercise, and to induce him to apply to Dr. GUILLOU, the narrator of the case, for relief. This physician believing that he could detect fluctuation in the abdomen, prescribed drastic purgatives, diuretics, &c., and these affording no relief, punctured the abdomen, but no fluid flowed through the canula. There was no inflammation of the integuments, and the internal functions were all regularly performed, but various physicians, who examined the case, concurring in the belief that fluctuation in the abdomen was manifest, tapping was again resorted to, and several times repeated, but without any fluid being obtained through the catheter. The abdomen continued to enlarge until the patient could not support any other posture than with his elbows on a table, or lying on his right side. The appetite, which to this period was good, began to diminish; swallowing food produced dangerous strangulation; the lower limbs and scrotum became infiltrated, and after several days constipation he died suddenly asphyxied, the 23d of November, 1836.

Autopsy.—The abdomen measured six feet five inches from the hypochondrium to the pubis; three feet four inches from the xyphoid cartilage to the same point; and five feet two inches around the body. *Fluctuation still very sensible.* The abdomen being opened, showed an enormous tumour occupying its whole cavity. This tumour closely adhered to the right side of the abdomen. It consisted of two portions, one superior and larger, the other inferior, thicker, and separated by a space, in which were lodged the mesenteric vessels. Both were fixed in front of the spinal column, extending from the space between the pillars of the diaphragm as far as the scrotum. The superior portion was divided by a deep furrow into two unequal lobes; it rested below on the second portion by a thin edge, whilst its superior border, which was thicker, was in contact with the liver and diaphragm, which it pressed upwards without adhering to them. Its form was irregularly rounded; its circumference five feet one inch; its greatest diameter nineteen

inches, and its smallest seventeen. On the left of and behind this portion, were the stomach, the spleen, and small intestines; the kidneys were under this mass; all these organs appeared healthy. The pancreas was redder than usual. The lumbar muscles were covered with large ecchymoses.

The inferior portion occupied the pelvis, and reposed on the iliac vessels, on the venæ cavæ which were gorged with blood, and on the sigmoid flexure of the colon which it compressed; it had not, however, any close adhesions with any of these parts. This portion of the tumour is thicker and more rounded than the other; its tissue firmer, and its surface more nodulated. Its circumference was four feet; its thickness seven and a half inches; its greatest diameter fifteen inches.

The cæcum, which appeared much dilated, occupied the interval between the two tumours; a portion of the right lumbar colon is lodged in the fissure in the upper tumour, and the left lumbar colon adhered to the lower tumour.

The epiploons had disappeared, and the whole of the peritoneum seemed to have been used to cover this abnormal production, on the surface of which it formed a smooth membrane, and the development and lobulated form of which seemed also to have been determined by the attachments of this serous envelope.

The tumour of the scrotum was not at all adherent to those of the abdomen; it could, by taxis, be partly pushed through the ring which was much dilated, into the abdomen. It was flattened anteriorly and posteriorly; its lower portion was thinnest; its upper adhered to the aponeurotic expansions which covered the internal orifice of the inguinal canal; its internal border was straight and united to the spermatic cord. It was surrounded by several ganglions, which were hypertrophied and variously degenerated; some of them ossified.

These tumours were of a *gelatinous consistence*, and to the feel were like the medusæ. It might be supposed, from the sensation they presented to the touch, that they contained hydatids. On incising them, the tissue was found to be homogeneous, and evidently of a fibrous nature. The lower tumour was the firmest, and some portion of it was almost cartilaginous.—*La Presse Méd.*, 5 April, 1837.

II. *Dorsal Point*.—M. CRUVEILHIER has observed what has probably been noticed by most practitioners, that affections of the stomach, heart, liver and lungs, frequently coincide with pain in a fixed point of the vertebral column, varying according to the organ diseased. He calls this painful spot the *dorsal point*. Painful diseases of the viscera are, it is well known, very often accompanied with pains in a determinate point of the vertebral column. Every observer must have seen cramps of the stomach, when arrived at their height, give way to a pain more or less acute, about the fourth dorsal vertebra; and in some cases, the patients complain more of this pain than of the cramp of the stomach. This is observable not only in cramp, but also in ulceration and cancer of this organ. In hepatic colic, the dorsal point exists also about the eighth and ninth dorsal vertebra. In all pains of the heart, whether nervous or sympathetic, of an organic lesion, whenever they attain a very great height, the dorsal point at the fourth or fifth vertebra, accompanies the pain of the organ, and distracts the patient more than the latter. In diseases of the womb, the pain occurs at the second or third lumbar vertebra; and in the sacral region, in diseases of the neck of the uterus. Cruveilhier has found that greater relief is experienced by applying the remedies to the dorsal point than to other parts; thus, for example, patients affected with cancer of the uterus, receive greater relief from blisters, leeches, and cauteries, to the dorsal point, than to the hypogastrium. A woman affected with disease of the heart was entered as incurable at the Salpêtrière; she was incapable of moving; she was obliged to lie in bed; she felt oppression, suffocation, and pain, occupying all the region of the sternum. Cruveilhier, after employing every possible treatment, digitalis, leeches, blisters, &c., for several months, thought of the dorsal point. The pain was circumscribed to two dorsal vertebrae. Cruveilhier applied the cautery to this point, and the pain was speedily removed; the oppression and suffocation disappeared; it is a year since she left the hospital and is considered as cured. Cruveilhier admits that he got the first idea of this treatment from an English memoir, in which it was proposed to apply therapeutical remedies to the vertebral column, in preference to other places. It was also suggested to him, by his researches on the nervous system, from which it results that the visceral or ganglionic nerves are not independent, but have their roots in the spinal

marrow; he conceives that by acting on the spinal marrow the organs will be influenced.—*Gazette des Hôpitaux*, July 8, 1837.

12. *Lecture on Auscultation of the Chest.* By M. Louis.—Many of you, gentlemen, have wished me to dedicate one of these conferences to the study of the auscultation of the chest. Although the facts which I shall have to set before you will be far from being all new; although a considerable part of them have been most accurately described by one of the great medical luminaries of our era, the celebrated author of the "Treatise on Auscultation;" and although you have already seen them singly in the cases which I have from time to time shown you in this clinical course, I still think that it will not be useless to combine these scattered elements, and to rise into those general reflections which are the natural consequence of their union. I yield the more readily to your wishes, because no one is more impressed than myself with the importance of auscultation, as a means of diagnosis in the diseases in which it can be employed, and because I am convinced that we cannot be too zealous in making a knowledge of it familiar, even by repeating what has been said often and often before. I shall merely give a summary view of the facts which have become, so to say, common-place in this science, and I shall insist more upon those which, though less known, are not less important, for they are the results of accurate observation in a very considerable number of individual cases.

Auscultation is the exploration of the sounds which are produced in different parts of the body, whether healthy or diseased. As I wish to confine myself to one lecture, I shall speak only of the auscultation of the respiratory organs; and, as a preliminary, I will mention the precautions which must be taken in order that auscultation may be practised with accuracy, and that inferences may be drawn from its results without risk of error.

The person to be examined should lie on his back, or sit, according as we wish to auscult the anterior or the posterior part of the chest; he must lean neither to the right nor the left; his shoulders must be in the same plane, and his symmetrical muscles in the same state of relaxation or tension as the position of the patient.

The contraction, tension, and relaxation of the muscles, have a marked influence on the results of auscultation, and when the corresponding points of the thorax are examined in comparison with each other, as we must always do if we want to draw rigorous inferences, we might imagine differences that did not exist, merely from the bad attitude of the patient:

The auscultator, too, must select a convenient position, as Laennec recommends, and take care that the respiratory sounds are not intercepted by thick clothes, and particularly that the patient does not retain any which might produce a fallacious sound, as, for instance, silk coverings. He must also find out which is his best ear, as experience shows that almost every observer has one ear finer than the other. All these precautions, which at first sight may seem over-punctilious, are absolutely necessary to prevent our falling into gross errors.

In opposition to Laennec, it is now allowed that the naked ear perceives sounds as well as when aided by the stethoscope; and, indeed, it often happens that it distinguishes shades of sound which had escaped it when assisted by this instrument. The cases in which we ought to prefer mediate auscultation are very rare, and it is often necessary to have recourse to immediate auscultation to determine with clearness what would otherwise be obscure.

The patient and the observer being properly placed, auscultation, to be successfully practised, requires another condition, namely, the ear, if unaided, is to be exactly applied to the chest; if the stethoscope is used, the whole of its circumference is to be applied to the parietes of the thorax, so that if the patient is so wasted that the intercostal spaces leave a cavity under the stethoscope, it must be filled up by compresses placed upon the thorax.

All these preliminaries being observed, auscultation requires nothing but a certain degree of attention; and as it is impossible to know what is pathological, without first knowing what is normal, I will briefly state the sounds which belong to the healthy state.

§ 1. **HEALTHY STATE.** *Normal Respiration.*—In a healthy person, we hear during inspiration a soft and gentle murmur, which is especially distinct towards the anterior and lateral parts, as well as the lower two-thirds of the pos-

terior part of the thorax. The respiration approaches the bellows' sound in the space between the vertebral edge of the scapula, and the dorsal spine, at the level of the origin of the bronchi; and this blowing respiration, which exists also, though in a less degree, towards the sub-spinal fossæ, is more marked on the right than on the left; a circumstance worth remarking, as, if one was not forewarned of it, one might mistake the healthy for a diseased state. This difference is accounted for by the calibre of the bronchi, which is greater on the right than the left side, as appears from the researches of Dr. Gerhard, of Philadelphia.

These phenomena take place during inspiration only; for, at the moment that expiration begins, the respiratory murmur ceases to be heard, or nearly so, excepting in the upper and posterior third, where a sound similar to that of inspiration, at the same points, but weaker, may still be heard. These sounds vary in force according to age, *embonpoint*, and the strength of respiration; but in these different circumstances their essential characters are not sensibly changed.

Resonance of the voice.—If a healthy man speaks while we are examining his chest by auscultation, we perceive a resonance, a sort of general tremor, which is at its maximum behind, and at the junction of the middle and the upper third of the chest; that is to say, at the same point where the slight blowing respiration is heard. These two effects are owing to the same cause, and this slight bronchophony is rather stronger at the right than at the left apex, for the reason stated above; so that when this difference is inconsiderable, and not accompanied by any remarkable modification of respiration, we cannot infer from it the existence of any morbid state.

§ II. PATHOLOGICAL STATE. The alterations produced by disease in the different sounds which I have just described, are numerous and varied. Let us examine them with care, and let us see what is the degree of their importance relatively to diagnosis, and whether, if properly studied alone, these alterations are capable of distinguishing the different diseases of the chest from one another. Let us first study the alterations of the respiratory sound, independently of the rhonchi (*râles*) which are combined with them.

1. *Modification of the respiratory sound.*—The most simple of these modifications is obviously the weakening of the respiratory murmur; it is found in the emphysema arising from dilatation of the pulmonary vesicles. This weakening, which is generally proportioned to the duration of the disease, is at its maximum anteriorly, where the emphysema is usually the greatest; it is also permanent. If it is general, and not considerable, we may be uncertain as to its real cause, for the strength of the respiratory murmur varies in a state of health: but if the diminution is limited in extent, and constantly observed; if it is on one side of the thorax only, or if it differs in degree at corresponding points, it is obviously pathological, and very probably depends on a greater or less dilatation of the pulmonary vesicles. It is true that the diminution of the respiratory sound takes place in other diseases, in pleurisy, in phthisis, and in pulmonary catarrh; but then it is developed in particular conditions which allow us to recognise its real cause, or at least strongly suspect it.

In pleurisy, indeed, when the effusion is not very considerable, we can hear the respiratory murmur through the effusion, but much less clearly than in the healthy state, or than at the corresponding point of the other side; and then, moreover, this diminished respiratory sound is deeply situated, and has the softness of the normal state. It is particularly below and behind that it is found, while in emphysema the maximum of diminution of the respiratory sound takes place anteriorly. This latter sound, too, is superficial; it becomes dry, and loses its regular softness. Although in phthisis the diminution of the respiratory murmur is generally found at the beginning of the disease, it is at the apex of the chest where the developement of tubercles begins. When this diminution takes place in pulmonary catarrh, it is not permanent; and as it depends on the obstruction of the bronchi by mucus, it is merely requisite to make the patient cough, to remove the obstacle which hindered the free passage of the air, and thus restore the natural intensity of the respiratory murmur.

Hence the diminution of the respiratory sound, when properly studied, can lead us, independently of a rhonchus, of percussion, or of the inspection of the thorax, to a diagnosis of several affections of the lungs; and if this diagnosis is

not absolutely infallible, at any rate it is such as to establish the strongest presumption in favour of the existence of such or such an affection. To sum up, the diminution of the respiratory murmur derives all its value from its situation, its permanence, its degree of distance from the ear, or nearness to it, its dryness or softness. Thus:—

First, in emphysema this diminution continues in the same point, is usually at its maximum anteriorly, and is accompanied by a certain roughness, which does not exist in the healthy state.

Secondly, in pleurisy it occurs at the inferior and posterior part; the respiratory sound is deeply situated, and preserves its softness.

Thirdly, in phthisis the diminution takes place at the apex.

Fourthly, in pulmonary catarrh its situation is variable, and its duration momentary.

A similar circumstance occurs in these various affections: in the first three a certain number of pulmonary vesicles no longer admit the air, in consequence of the compression which they suffer; in the last, in consequence of the presence of mucus in the bronchi.

2. *Absence of the respiratory sound.*—The respiratory sound may be completely wanting, and this over a variable space. This occurs when a tumour compresses the great bronchi, as in some cases of aneurism; or when there is a slight effusion of air or water, as in pneumo-thorax, or many cases of pleurisy.

In the last two cases, auscultation, independently of other means of examination, cannot fix the diagnosis of the disease which suppresses respiration. It is not so in the first, if the respiratory sound is wanting only on the surface of the lung, as effusions of air and water are not limited to this part of the pleura.

Having considered the diminution and absence of the respiratory sound, let us examine its morbid changes.

3. *Alteration of the respiratory sound.*—*a.* The most remarkable for its strength is amphoric resonance, or amphoric respiration, which arises from the air entering a large cavity through a narrow opening. When it exists, we are certain to find either a considerable excavation in the substance of the lungs, consequent on the breaking down of tuberculous matter (and then its seat is always at the apex of the lung), or a cavity arising either from a defined gangrene, or from a large bronchial dilatation, in which case its seat is variable. Thus it is the place alone where amphoric respiration is found which could serve to fix the diagnosis, if we did not know the other symptoms and the progress of the disease; for in all these cases the modification of the respiratory sound is precisely the same. But the laws of pathology are so unchangeable, that even if we had nothing to assist us but the knowledge of the seat of the lesion, the diagnosis would be almost certain.

b. When less considerable, the alteration we have been treating of is called bronchial respiration; it is a sound like that which is heard when the ear is applied to the trachea. Bronchial respiration occurs whenever the air passes through the bronchial tubes without reaching the pulmonary cells. In those cases where the substance of the lung is disorganized, and approximates to a completely solid tissue, it is—

First—One of the most certain signs of the red and grey hepatization of the lungs, being the alterations which constitute the second and third stage of pneumonia; they occur almost always posteriorly, and more frequently at the base than the apex.

Secondly—It also occurs in pleurisy, when it is less distinct, and somewhat smothered; it is then sometimes capable of being displaced by the effusion;—a phenomenon which does not take place in any other affection.

Thirdly—In the dilatation of the bronchi, it is remarkable for constantly remaining in the spot opposite to the lesion, whatever may be its seat.

Fourthly—Tubercles, when they have arrived at a certain stage, are manifested by bronchial respiration under the clavicle, and in the supra-spinal and sub-spinal fossæ. We must beware, however, of confounding natural and bronchial respiration, as they have some resemblance; it requires a practised ear not to be deceived in a host of cases where the characteristic of which we are speaking is not prominent, and is consequently doubtful. It is by alternately and carefully examining the corresponding points of both sides, that we shall succeed in discriminating the difference, not forgetting that there is a slight difference in the

healthy state, respiration being always stronger and more dry on the right side, and consequently approximating a little more to the bronchial *souffle*. This excess of sound appears still greater when the two sides are compared; so that the physician who was not aware of this would obviously be liable to serious mistakes.

In all the affections in which bronchial respiration is met with, there is a great similarity in the organic lesion. The substance of the lungs is condensed by inflammation in pneumonia, by compression in pleurisy; it is more or less indurated around dilated bronchi; when there are tubercles, the pulmonary vesicles are replaced by the new formation.

c. Prolonged and blowing expiration is a change in the respiratory sound allied to bronchial respiration. In order to estimate it at its just value, we must recollect that this part of respiration, which in most persons is performed without any sound, may be accompanied by a slight inurmur without any disease, provided that it is equal in the corresponding points of both sides. At the same time that the expiration is prolonged, the inspiration loses its softness and marrowiness, becoming less strong, but more rough. If these two phenomena are observed under the clavicles, they are sufficient of themselves to make us admit the presence of tubercles; and this characteristic sign is the more valuable, as it is generally met with before phthisis is far advanced.

d. Between bronchial respiration and amphoric resonance there is an intermediate modification, namely, cavernous respiration, of which the name alone points out the kind of lesion on which it depends.

To produce cavernous respiration, the lung must contain a large excavation, communicating by one or more bronchi with the external air. But excavations of this kind may be produced in four different ways:—

1st. By the breaking down of tubercles. In this case, cavernous respiration is found at the apex of the chest, and its situation is enough to indicate the lesion on which it depends.

2nd. When, in the progress of pneumonia, abscesses are formed, (a rare event, however,) it is cavernous respiration which points out their existence as soon as they communicate with the external atmosphere. In such cases the alteration of the respiratory sound is found most frequently at the base of the lungs.

3d. The excavation may arise from a partial gangrene, of which the matter becomes liquid and is evacuated externally by one or more bronchi in communication with the collection of pus.

4th. It may be the effect of a very large bronchial dilatation. In these last two cases the situation no longer assists the diagnosis, for gangrene and dilatation of the bronchi may appear in very different parts.

To these morbid changes in respiration are allied other phenomena of auscultation produced by the resonance of the voice.

MODIFICATIONS OF THE RESONANCE OF THE VOICE. a. *Bronchophony*.—The most remarkable of these changes is the one which accompanies bronchial respiration, and is called bronchophony. These two sounds are necessarily associated, and whenever one is heard we are sure to find the other. They are met with:—

First, in the first and second stages of pneumonia. In this case, the bronchophony is constant, continues for a very considerable time, and varies in extent and intensity, according to the progress of the disease.

Secondly, in dilatation of the bronchi. In this affection it is not always of the same loudness; this arises from the greater or less thickness of the indurated tissue around the dilated tubes.

Thirdly, in tuberculous subjects, bronchophony is heard at the apex, and, posteriorly, in the supra-spinal and sub-spinal fossæ, and under the clavicles. The remark we made on bronchial respiration holds good here: the farther we go, the more we must be convinced that auscultatory signs derive their chief value from the place where they are discovered; for the same sign belongs to several different affections, the seats of which are different also.

Fourthly, in pleurisy, bronchophony manifests itself at the inferior and posterior part of the chest. This would not be sufficient to distinguish it from the bronchophony produced by pneumonia, were it not for another characteristic sign, namely, the possibility of altering the place when the sound is heard, by altering the situation of the effused fluid; but this is not necessary to make the

diagnosis certain, when bronchophony undergoes the particular modification which is called ægophony. It may be admitted as a general rule, that ægophony (which is variable in intensity, and often difficult to find) is a pathognomonic sign of pleuritic effusion; and to produce it, the effusion must reach but not overpass certain limits, the extent of which is not known.

This situation inferiorly, and the facility of displacement, though generally signs of pleurisy, do not form a rule without an exception. To convince you of this, it will be sufficient to tell you that Laennec once saw a case of numerous adhesions separating several effusions from each other, which formed so many partial pleurisies. It is evident that in cases like this the effusion may be suspended, so to say, at different heights, and that it cannot be displaced.

Another difficulty now and then occurs. In some patients the pleuritic pain is but slight, and the resonance of the affected side differs but little from that of the opposite one: ægophony is difficult to ascertain, and the only appreciable alteration consists in a slight diminution of the respiratory sound. In such cases is there effusion? If there is, the quantity of fluid must be very small.

Though there is no doubt as to the way in which bronchophony is produced (for there the sound, after reaching the greater bronchi, is transmitted to the ear by a tissue which has become completely solid), it is not the same with ægophony, which is not easily explained. Laennec attributed it in great measure to a certain degree of flattening, which he supposed the bronchi to sustain from their compression by the fluid. Among the number of the arguments which he has himself given against this theory, he has forgotten one, namely, that when strong and thick adhesions have taken the place of the fluid, this flattening ought to occur and produce ægophony, which is not the case. In short, we must conclude that ægophony has the most striking resemblance to bronchophony, from which it differs only by one peculiarity, viz. *bleating*.

b. When still louder, the resonance of the voice is called pectoriloquy, which resembles the sound that would be produced if the patient spoke directly into the ear of the observer. It is indispensable for its existence that there should be a very considerable cavity communicating with the bronchi. It occurs—

First, in phthisis, when the cavities have acquired a certain size, and are surrounded by an indurated tissue;

Secondly, in gangrene, when the parietes have acquired a sufficiently great density;

Thirdly, in abscess of the lungs;

Fourthly, in dilatation of the bronchi, when it is sufficiently great.

The existence of pectoriloquy being once ascertained, its situation will assist in pointing out, if not with certainty, at least with probability, the kind of lesion on which it depends. If it is at the apex of the lung, there is a strong probability in favour of a tubercular excavation; if it is at the lower part, a dilatation of the bronchi may be suspected. The other two lesions which may give rise to pectoriloquy have no fixed seat.

It may happen that no pectoriloquy can be heard, though the existence of a considerable excavation is certain: this happens when the communication of the cavity with the exterior is cut off by the compression of the corresponding bronchi, or the obstruction of these tubes by substances proceeding from the excavations; in this case auscultation loses the greatest part of its advantages.

THE RHONCHI. The auscultatory signs which we have successively considered are nothing more than morbid changes of the respiratory sound. Let us now examine another series of phenomena, which are not less important, and which cannot be considered as deviations from the normal state of respiration. This series consists of the rhonchi, which are divided into two kinds, the dry and the moist.

1. Dry rhonchi.—These may be reduced to two chief ones, the sibilous and the sonorous rhonchus.

a. The sibilous rhonchus resembles a slight and prolonged whistle, either grave or acute, dull or clear; it occurs—

First, almost always in emphysema, and sometimes from one extremity of the chest to the other; it is capable of masking the respiratory sound.

Secondly, in pulmonary catarrh it is generally limited in extent, and attacks different points successively, which is not the case in emphysema.

Thirdly, in typhoid affections it occurs in three-fifths of the cases; generally about the eighth day, and over the whole chest.

Some practitioners have considered it, in such cases, a symptom of inflammation of the bronchi; but the readiness with which it changes its place does not allow of this supposition: there is no doubt that it depends on the presence of a small quantity of fluid, which easily changes its place.

b. The sonorous rhonchus is a grave sound, and sometimes extremely loud; at one time resembling snoring, at another the sound of a bass-string, and, very frequently, it is like the cooing of a turtle-dove. It is very commonly found at the commencement of pulmonary catarrh. Laennec supposes it to proceed from the swelling of the bronchial mucous membrane, especially at the prominence produced by the division of the bronchi; but he does not give any case in confirmation of this theory, nor does he tell us how he ascertained the existence of this lesion.

2. *Moist rhonchi*.—These are more frequent than the preceding ones, are of greater importance, and in a great number of cases are sufficient to fix the diagnosis.

Mucous rhonchus.—This has been compared to the sound of air blown through a tolerably dense fluid, such as soap-and-water, or sometimes a thicker liquid.

It is one of the signs—

First, of pulmonary catarrh; it then exists on both sides, and progressively descends.

Secondly, of phthisis, when the tubercles become soft; it then occurs at the apex of the lungs, under the clavicles.

Thirdly, of gangrene.

Fourthly, of dilatation of the bronchi.

Fifthly, of abscess of the lung.

It is generally circumscribed, and confined to one side, when alone, therefore, it cannot form a pathognomonic sign.

The mucous rhonchus has several varieties in relation to the size of its bubbles, which vary from the smallest to the greatest.

The crepitous rhonchus has been accurately compared to the sound produced by salt thrown on burning coals, or by dry parchment rubbed between the fingers. It exists in one disease only, namely, pneumonia: it is the pathognomonic sign of its first stage, or pulmonary *engorgement*. It is small, equal, clear, and most usually without respiratory murmur. As long as it is not very extensive, it is unaccompanied by bronchial respiration. Is it always met with, as Laennec says? On this point the author of the *Treatise on Auscultation* contradicts himself; for he says, in one passage, that this rhonchus is only heard at a small distance from the ear; yet afterwards, when speaking of pneumonia, he adds, that an inflamed nucleus in the centre of the lung, were it no bigger than an almond, would be discovered by producing the crepitous rhonchus. It is acknowledged, however, that in such a case the crepitous rhonchus is not heard: this has been proved by MM. Chomel and Andral. One remark to be made upon this rhonchus is, that it is heard over the whole chest of some healthy persons, at the instant of a first forcible inspiration, after which it disappears. In this case is it owing to the presence of a certain quantity of fluid in the pulmonary cells, or rather to the unfolding of their parietes? The latter supposition ought to be adopted, when we consider that this operation is identical with that which occurs in the infant at the moment that the air enters the lungs for the first time.

Can this rhonchus be confounded with the sub-crepitous rhonchus? Undoubtedly not; for the crepitous rhonchus is finer, clearer, more dry, and always uniform. The sub-crepitous rhonchus is coarser and more moist, and the size of its bubbles is very variable. This distinction is of very great importance. Practitioners, from confounding the two rhonchi, have thought that they had to do with a pneumonia when it was only a pulmonary catarrh, and may also have thought that it was their treatment which prevented it from passing from the first to the second stage.

The *sub-crepitous rhonchus* occurs especially:—First, in the pulmonary catarrh, when it is acute and intense; its regular situation is the posterior and inferior part of the chest, on both sides at once; it sometimes extends to the upper part,

but always begins below. It varies according to the stage of the catarrh, and but rarely masks the respiratory murmur.

Laennec admits its existence in emphysema, and makes it the chief sign of that disease; but this is a mistake. In emphysema this rhonchus is identical with that of pulmonary catarrh; it occurs in the same points—that is to say, posteriorly, inferiorly, and on both sides; but if it depended on the emphysema, it ought to occur in front, where the emphysema has its seat, which is never the case.

Secondly, Laennec admits of its existence in pulmonary œdema. To allow of this, it would be necessary that the serous fluid in the cellular tissue of the lung should transude through the bronchi; but this is not so.

Thirdly; if the sub-crepitous rhonchus is heard on one side only, posteriorly and inferiorly, it either indicates tubercles, or, more rarely, a dilatation of the bronchi.

This law is without exception: at least for the last four or five years, in five or six hundred simple pulmonary catarrhs which have fallen under our observation, the sub-crepitous rhonchus has always existed on both sides at once.

Fourthly, it is often heard at the upper part of the chest, and is then sufficient of itself, if not to make us affirm positively that there are tubercles, at least to make us strongly suspect it.

You have seen, gentlemen, the application of this rule within these few days, in the case of a patient labouring under chronic peritonitis, and in whom the sub-crepitous rhonchus existed only at the upper part of the chest. This sign confirmed the idea that I had formed of the tubercular nature of the peritonitis.

I should tell you, moreover, that I have never met with a chronic peritonitis that was not tubercular.

Having now gone through the rhonchi, I must explain another auscultatory sign, the *metallic tinkling*, which consists of a clear and silvery sound, exactly like that produced by a pin or a metallic point in a silver cup.

It occurs in two cases:—

First, when there is a large tubercular excavation, and

Secondly, in perforation of the pleura. Hence the necessary condition for its developement is the existence of a considerable cavity containing a little fluid, surmounted by a certain quantity of air.

The explanation given by Laennec, who compares it to the sound produced by a drop of fluid falling upon the surface of the effusion, has lately been combated by M. Beau. This physician considers it produced by a bubble of air, which, having traversed the fluid, bursts upon its surface.

M. Beau founds his opinion on the fact of his never having witnessed metallic tinkling when the communication with the external air was above the level of the fluid.

Lastly, I will not finish this lecture without examining with you an auscultatory sign of great importance—the *sound of rubbing*. It requires great attention to distinguish it from a similar sound arising from the clothes of the patient or the observer.

First, Laennec has pointed out this sound as being a characteristic of interlobular emphysema.

Secondly, it is one of the first signs of pleurisy, but it is difficult to ascertain it, on account of the rapidity with which effusion is produced. It is frequently met with at the end of the disease, when the effusion is completely absorbed and false membranes alone remain.

Thirdly, in some patients who have suffered from pneumonia, and who are nearly cured, a well-marked crepitation can be perceived for a long time; and this, when combined with a certain dulness in the sound, might deceive one, and make one believe in the existence of a continued engorgement of the lung, which it is not easy to suppose. Is it not more probable that this sound is owing to the friction of false membranes incompletely organized? This interpretation is supported by the anatomy of these false membranes, which are often found to have a reticulated appearance. Would not these uneven surfaces produce the continued crackling, by rubbing against one another? It is a difficult question; but this seems to me the probable solution.—*London Med. Gaz.* from *La Presse Médicale*, July 1 and 5, 1837.

13. *Discharge of a Beetle from the Urinary Bladder.*—A robust man, æt. 23, who had never been ill except just previously of fever, was attacked suddenly by symptoms of the most acute inflammation of the urinary bladder, with intense desire to make water, pains in the perineum, and discharge of mucous flocculent and bloody urine. He was treated by leeches to the perineum, anodyne local applications, and copious demulcent drinks, but without the least relief. After suffering intensely for five days, he found himself unable to pass his water, and this evidently from some mechanical obstruction in the urethra. To relieve this, Dr. Erismann was sent for; but before a catheter could be introduced, the patient discharged a body, of the size of a pea, covered by purulent matter; it was followed by the escape of a considerable quantity of urine, mixed with pus, and immediate relief of all his symptoms. On closely examining the discharged body, it was found to contain a little beetle (*Plinus fur.* Linn.), which died directly on its exposure to the atmosphere. The patient recovered in three days.

The author quotes several cases of a similar kind, in which worms, larvæ, insects, and one from Schrader, where living slugs were discharged from the bladder, and speculates at great length and with much ingenuity on their origin.—*Lond. Med. Gaz.* from *Schweiz. Zeitschrift*, Vol. II. Part I.

MATERIA MEDICA AND GENERAL THERAPEUTICS.

14. *On the action of Narcotics.* By G. G. SIMMOND, M. D.—(Extracted from his lectures on Materia Medica, delivered at the Windmill street School of Medicine.) Narcotics are distinguished from all other medicines by the specific action which they exercise upon the cerebro-spinal system, but more especially upon the brain, to which, quickly after they are taken into any part of the system, they are conveyed by the blood-vessels. They closely assimilate in their general action, according to the nature of each individual substance and the quantity which may be applied, though considerable differences occur in their individual capacity. Although in their greatest state of intensity, the result of their action is so instantaneous that the progress is scarcely to be watched, in their general operation we observe three stages consecutive to each other; first, an acceleration of arterial blood to the brain; secondly, a venous retardation there; thirdly, an engorgement of the circulatory system in that organ: the first stage being marked by the increased energy of the functions, corporeal and intellectual; the second stage exhibiting their disordered state; and the last stage their temporary suspension.

A familiar illustration of these three consequences may be observed in the state of intoxication from a diffusible stimulus, alcohol, which is classed, from its ultimate effects, under the narcotics. During the arterial acceleration produced by alcohol in its various forms, there is an elevation of the faculties and the corporeal powers; this is differently exhibited, and is much dependent upon the source from which the spirit is obtained, and the state in which it is combined. But the ordinary results are—a glow of heat, an increase of the capillary circulation, the cutaneous perspiration more abundant, the respiration performed with ease; the pulse is, consequently, increased in strength and frequency, the animal heat is elevated; the eyes become more than usually expressive, the countenance is lively; as the stimulus is increased, so are the phenomena of excitement; the circulation acquires a febrile rhythm, the functions are exercised with an inordinate energy, the mind keeps pace with the body; mirth, and joy, and gaiety, are awakened, the wit is lively, and the intellect improved; but to this succeed a general languor and sluggishness, nausea, sickness, vomiting, an obscurity or haziness of vision, incoherence of speech, unwonted muscular motion, muscular debility, and incapability of exercising volition; the vision becomes double; vertigo, internal anxiety, and depression of spirits; in the third stage, a peculiar state between stupor and sleep, which has been called somnolence, occurs. This is the train of phenomena which mark the diffusible action, and the depressing re-action, of narcotics. Great is the rapidity with which many of these agents are taken into the system: an example of this occurs in æther: when a small quantity is given, in a few minutes it finds its way into the circulation; it acts upon the nervous system al-

most immediately, and as a proof of the quickness with which it enters into the circulatory system, it is almost instantaneously given forth by the expiration from the lungs, and the whole room is pervaded by its characteristic odour.

In the action of narcotic agents, you must remember, that such substances pass not only from the stomach and intestines with an inconceivable rapidity, but that the lining membrane of the lungs and that of the skin, when the epidermis is removed, possess the power of imbibition in a very high degree. When directly introduced into the blood, as in injection into the veins, they act most rapidly. The doctrine that it is by the lymphatics that they are absorbed into the system, and carried to the thoracic duct, has been overthrown by Magendie; and he has satisfactorily shown that the blood-vessels, both arterial and venous, dead or living, great or small, possess the peculiar power of imbibition, which likewise takes place upon every tissue and upon every surface; that a strongly poisonous fluid kills, no matter whether it be placed in the mouth, on the mucous or serous surfaces, or on the denuded skin, and that the rapidity of the imbibition depends upon the quickness of circulation, and also upon the fulness or emptiness of the blood-vessels, upon which circumstances the acceleration or retardation of a narcotic substance depends; the rapidity of imbibition almost surpasses belief.

Magendie relates the case of a curé, who was poisoned almost immediately by the introduction of a morsel of strychnine into a seton. An instance of the rapidity with which alcohol is carried by the blood-vessels to the brain occurred in the Westminster Hospital. A man was taken in dead, who had just drunk a quart of gin for a wager. The evidence of death being quite conclusive, he was immediately examined; and within the lateral ventricles of the brain was found a considerable quantity of a limpid fluid, distinctly impregnated with gin, both to the sense of smell and taste, and even to the test of inflammability.

Narcotics have been distributed into sedatives, or substances which have the power of diminishing action, either local or general; into anodynes, which alleviate the pain and sufferings of organs, or of the various tissues of the body; and lastly, into soporifics, or those which produce sleep. The first diminish sensibility, the second communicate ease to the nervous system, and the third give repose to the organs of the body.

From the action they exercise over the cerebro-spinal system, it follows that narcotics influence very considerably all the functions of organs, and new and inordinate actions, or derangements of digestion, of nutrition, and of secretion, follow. Thus they impede the digestive organs, and prevent the sensation of hunger; hence the use of opium by those who are incapable of purchasing sufficient food. Sometimes they obstruct chymification going forward; if taken during a meal the aliment is sometimes rejected, without having undergone the usual change. Some of them produce constipation, and the large intestines become sluggish, and incapable of obeying the usual stimulus; they lose their habitual power of contraction, and the largest doses of active medicines which should stimulate them to expel their contents are unavailing. Dryness of the mouth, of the throat, thirst, which seem to depend upon the loss of power of the mucous membrane, the muscular tissue is deprived of its general sensibility, the cutaneous perspiration is impeded, and the intellectual powers become impaired.

The following enter into the list of narcotics, and from them different preparations are obtained:—*Papaver somniferum*, *hyoscyamus niger*, *conium maculatum*, *atropa belladonna*, *datura stramonium*, *Nicotiana tabacum*, *digitalis purpurea*, *laurus camphora*, *prunus lauro-cerasus*, *strychnos nux vomica*, *Humulus lupulus*, *aconitum napellus*, alcohol, æther, white poppy; henbane; hemlock; deadly night shade; thorn-apple; tobacco; fox-glove; camphor laurel; cherry-tree laurel; vomit nut; hop; aconite.

Besides these, there are many substances which will incidentally be the subject of examination; but each of those I have just mentioned to you will be separately enquired into. There are, likewise, different operations on the system, such as general and local blood-letting, application of cold, and such auxiliaries as may be commonly employed in depressing the powers of life, when in a state of high excitement, that may properly be here introduced. Chemistry has, with great certainty, pointed out to us, by a series of inductive experiments, that the greater number of the vegetable narcotics owe their power to an alkaloid, which is united in their natural state to an acid, most probably proper to each plant, and that these alkaloids are infinitely more intense and energetic in their action than any

part of the narcotic in its ordinary state. The great advantage resulting to medicine from this important discovery has been the power that we possess of administering, in very minute quantities, the important means of cure. This, of course, is of very great utility in some instances. It will be for us to weigh, in each case, the advantages and the disadvantages attendant upon their employment. The processes for the obtaining these alkaloids are some of them so complex, that these substances are not likely to find their way into general practice; still we must collect all the information upon them that has as yet been given.

Of all the different classes of medicine we possess, we may fairly consider the narcotics, skilfully, judiciously, and watchfully administered, the most important; and here let me quote the words of the greatest physician this country ever saw, Sydenham. Speaking of the use of laudanum in dysentery, he says, "And here I cannot help mentioning, with gratitude, the goodness of the Supreme Being, who has supplied mankind with opiates for their relief, no other remedy being equally powerful to overcome a great number of diseases, or to eradicate them effectually. This medicine," he continues, "is so necessary an instrument in the hands of a skilful person, that the art of physic would be defective and imperfect without it, and whoever is thoroughly acquainted with its virtues, and the manner of using it, will perform greater things than might reasonably be expected from any single medicine." May I be excused, whilst thus quoting that first of practical men, if I impress upon your minds, if you would excel in your profession, to read and study deeply the works of Thomas Sydenham? They are few in number, but they are an invaluable treasure to the human race. In the language of his great annotator and admirer, Dr. Rush of Philadelphia, I must say, "They should not barely be read; they should be studied, for there is the same difference between reading and study that there is between exercise and labour. They should afterwards be read over and over, if you expect to profit by them. They should likewise occupy a place in your parlour window, in order to be consulted more easily in every hour's respite from business." SYDENHAM himself has said, in his treatise on dropsy, "If a person will give them a single reading, I am sorry I should be the means of making him lose his time; but if he will peruse them, and commit them to memory, I dare say he will reap such advantages from them as may in some measure equal my wish, and the great pains I have been at in making and compiling them." In thus speaking of Sydenham, I am following, at a humble distance, the example of the great men who have gone before us; and I doubt whether those who have deserted his slow and cautious footsteps have, in their hurry and boldness, increased the knowledge of our art, or promoted the happiness of man.

Other medical men have expressed very similar opinions as to the value of opium, Sylvius prized it so highly as to have declared, that without this drug he would abandon the science of medicine, as holding forth expectations that could never be realized. Fortunately we have in the list I have laid before you, not only valuable auxiliaries to opium, but substitutes for it, nay, even in some instances, agents that are to be preferred to it. Hyoscyamus, in affections of the brain, is preferable to opium; belladonna is more efficacious as a local application in painful affections; and conium has a peculiar influence upon the nervous system, by which pain in some of the most sensitive parts is more immediately lulled, as in diseases of the prostate gland, and in cancerous affections. Digitalis, or fox glove, is endowed with a power of controlling the inordinate action of the heart and arteries, and thus alleviating some maladies attended with peculiar distress, and that disordered sensation to which, medically, the term "anxiety" has been most appropriately given.—*Lancet*, Nov. 5, 1836.

15. *Cautions to be observed in the employment of soporifics.* By G. G. SIGMOND, M. D.—Great caution is always necessary in the employment of soporifics; there are states of the body in which, however necessary it may be to obtain sleep, yet we cannot have recourse to them without previously preparing the system, and very accurately and minutely weighing all the circumstances. In fevers and acute disease the first favourable system that excites our hopes is sleep; upon this sometimes the whole case turns; the patient to whom we had looked with anxious solicitude, for whom we scarcely dared venture to express an idea that might have induced the friends to entertain a hope, falls into a gentle slumber, his respiration is easy, his skin moist and warm; he wakes, as it were, from the brink of the

grave, refreshed and recalled to continue his path upon earth, even in a firmer state of health than he was previous to his attack. If this sleep has been naturally obtained, it always forms to us an indication of the utmost value; but if it be artificially produced, although it may have been productive of some apparent good, we cannot calculate upon it as enabling us to form a favourable prognosis, and indeed, if we cannot keep up the diffusible stimulating system, the reaction is great, and the constitution sinks afterwards more rapidly.

In almost all cases, narcotics must be administered with great caution, and to give them in every stage betokens an ignorance of the effects they produce. To give opium where the tongue is loaded with sordes, is to produce an irritation and an excitement; to give digitalis where the tongue is red, is to nauseate and lose the power of relieving by it; sometimes soporifics will diminish every secretion, the insensible perspiration, the saliva, the urine, the bile, will be acted upon, from not having taken the precaution previous to prescribing, to remove from the primæ viæ by gentle laxatives, the accumulated mucus which, covering the surface of the stomach and intestines, prevents the capillary circulation from being healthily carried on.

There are some circumstances which may, at first sight, appear of little moment, but which, I can tell you, from some experience, exert a most extraordinary influence upon your successful administration of soporifics; amongst these I will more particularly notice to you the effect of light. You will find that in some diseases, especially in nervous fevers, that if your patient has the stimulus of light, not only will the medicine be inefficacious, but it may, as you will sometimes see, become a source of irritation. It is often necessary that the room in which the sick person is should be kept in absolute darkness, otherwise a large, and what would be a potent, dose will produce no benefit. In some stages of disease, even the presence of a night-lamp will counteract all the good effect that has been anticipated. I have uniformly found the greatest difference in hospital practice result from the administration of a narcotic during the day, and during the night; in the former case it generally makes the patient fretful and irritable, and the various objects which must of necessity keep up a state of excitement, in a ward, militate strongly against it in the day-time.

Quiet is also important, fresh air, but not *cold* air, although the windows should be kept closed; the curtains of the bed should be left open, but not if there is a fire in the room, the flame of which attracts the eye, and such is then the disordered state of the sensorium, that a candle, or glare, will produce all sorts of illusions upon the mind. I have known delirium come on night after night, until the cause was ascertained to be the fire at the foot of the bed, the patient having taken a narcotic draught.

I need, in these days, hardly caution you against the talkativeness of nurses, or their officious zeal in waking the patient from a sweet and refreshing sleep, for the purpose of regularly giving the composing draught.

16. *On pain and the administration of Anodynes for its relief.* By G. G. SIMMOND, M. D.—The first symptom that usually excites the attention of the medical practitioner, as it is that upon which the sufferer most dwells, is pain or disordered sensation, and for that it is that relief is required. But, whenever you are called upon to alleviate pain, you must remember that you do not perform your duty by the administration of a remedy which can produce this effect alone. You are to be aware that pain is the symptom of a disease, and not disease itself, and that, in the greater number of cases, you do not advance one step by giving momentary ease, but, on the contrary, you may do the utmost mischief by masking the disorder, by further debilitating the system, and, besides, you are losing the most valuable opportunity of combating the cause. Again, in some instances, the temporary relief you give adds fuel to the flame, and will afterwards increase the mischief.

You are to examine what other signs or symptoms of disease exist. By combining them and comparing them, you are enabled to arrive at a conclusion as to the nature of the disease, to distinguish it from another, or to form a diagnosis, as it is termed. Were you to administer, during inflammation of the brain or its membranes, where there is acute pain and sleeplessness, a narcotic to obviate both these states, you would do great mischief, by determining still more to the

brain, by preventing the proper biliary secretions, and by losing the time of action; for blood-letting, under such circumstances, would produce all the effects which you might vainly seek from the employment of any narcotic.

I need scarcely observe to you, that feeling is the most universally diffused of our senses over the frame; it is the most simple and common to every part. In some places it is much more acute than in others, for some tissues are alive to the slightest touch, and are endowed with the greatest sensibility. But the organs that are most susceptible are not those which carry on the great actions of life.

Thus, with regard to the brain itself, which many physiologists consider as the seat of sensation, there is not a single part that has not been impaired or destroyed, without any apparent change in sensation. A number of cases have been collected by Haller fully proving this fact, and, with the exception of that disease of the heart in which its blood-vessels are found to be ossified, called *angina pectoris*, scarcely any pain accompanies some of the most striking diseases of the heart; and, after death, extraneous substances, such as a pin, a bullet, have been found in the heart, producing little or no disordered sensation during life.

Some of the most painful affections to which nature is subjected occur in the urinary organs, and those parts which are subservient to generation; and, fortunately for suffering man, the class of narcotics produces a number of substances which alleviate his pain, although they cannot cure it.

You must learn that there is as great an art in palliating disease as there is in curing it, and that the remedies I am about to speak of to you possess this power in an extraordinary degree; and the medical man who studies these points will possess a most important knowledge, which will be of the greatest service to him. It is a branch of art, I fear, very much neglected. Some individuals do not seem to know that many diseases are incurable, and the consequence is, that they are always attempting an impossibility; they are undermining the still healthy organs, or rashly are terminating existence. It is the duty of every one who practises this profession to study to prolong the days of man to its latest possible hour; and when the cause of disease is too deeply seated, he must teach his patient how he may best diminish the predisposition to it, how he is to avoid the exciting cause, and how best he may remedy the proximate cause.

Every point connected with pain as a symptom, must be deeply weighed before any one remedy is administered, and its connexion with other symptoms will generally prove a guide to the nature and seat of disease.

Pain is sometimes produced by causes visible to the eye, where external inflammation is present, where it arises from distension, compression, percussion, laceration, disorganization, application of extraordinary heat or of cold; but it is likewise seated internally, when its nature is to be ascertained by great attention to concomitant circumstances, by pressure in some instances, by its intensity, its duration, its situation, and by reasoning founded upon practical experience.

Beyond a certain point the body is incapable of bearing pain, and nature prevents all further suffering by suspending or by terminating existence; previous to that the nervous system is convulsed, fever is produced, and delirium supervenes. But when the system suffers from a less degree of pain, whatever the organ may be in which it is present, the great sympathetic nerve sooner or later, feels the influence; hence loss of appetite, nausea, vomiting, and disordered states of the alimentary canal, and of the secretions, are produced. There are accidents to which the body is subject, which occasionally give rise to excruciating and unrelenting pain, for which we vainly seek any remedy, and the suddenness with which life becomes extinct is fortunate for those to whom this calamity occurs.

Ruptures of the stomach, of the gall bladder, of the urinary bladder, destroy sometimes with immense rapidity, so that the suffering is not intense, but sometimes the patient survives some hours in great agony.

Rupture of the stomach is not of common occurrence, it is generally the result of over-distension combined with efforts to vomit. Chevalier mentions the case of a lad, 14 years of age, the inner coat of whose stomach was torn in many places, and that of the duodenum was lacerated completely round; he had eat and drank heartily at a Christmas feast, and was attacked with violent and severe vomiting; next morning he said he felt as if the blood in his head was

boiling, he was unable to swallow, the pulse became irregular, pressure on the stomach caused excruciating torture; he vomited two pounds of blood the following day previous to his death. Sometimes rupture of the stomach follows great exertion; thus a healthy coal-heaver in this town, whilst attempting to raise a heavy weight, suddenly cried out, clapped his hands to his stomach, drew two deep sighs and expired. A lacerated hole was found in the stomach large enough to admit the thumb.

Doubtless overwhelming pain has sometimes the principal share in the sudden termination of life, but under ordinary circumstances I do not believe death itself either to be the result of pain, or that in the greater number of instances it is attended with much suffering.

Medical men have been called upon to declare what quantity of pain individuals can endure, and they judge much by the temperament; the fair-haired, blue-eyed, light-complexioned person speedily faints after its application, whilst he who is dark, sallow, and black-haired, undergoes spasms, convulsion, fever, debility, and delirium, before nature refuses to give up her powers.

Pain may be acute, dull, aching, throbbing; may be increased by motion, by pressure, by the action of any particular organ; sometimes its limit is very much confined, circumscribed to one spot, or it may be very universally diffused; all these circumstances become indications of the particular remedy to which we are to have recourse.

You must remember that your patient is frequently incapable of referring you to the exact seat of pain, and that sometimes the sensation exists in a part at a considerable distance from the organ that is disordered, and were you to apply your narcotic to the point you would not relieve a single symptom. Thus, where the liver is diseased, the right shoulder is complained of; where a stone exists in the bladder, the top of the urethra sympathises; where the cells of the lungs and bronchi are clogged up with mucus, with pus, and with blood, the cough and uneasy sensations are complained of as affecting the larynx; those who have lost an arm or a leg will not unfrequently complain of the pain in the fingers and toes. I have known a blister applied to the thigh on account of pain and numbness there; and narcotics administered where the pulse has indicated inflammation; and upon the consequent death, the kidneys have been found gorged with blood, but the acute pain in the back and the state of the pulse had excited no attention in the medical man.

There are great varieties of disordered sensation which, though they are not immediately painful, are sources of the highest degree of irritation and of annoyance; such as soreness, tension, numbness, rawness of parts, formication, itching; this is sometimes so intolerable as to produce inflammatory fever, it is very frequently caused by various parasitic insects. I have known two cases of individuals, who were so dreadfully annoyed by this plague as almost to find life intolerable; an ointment, the principal ingredient of which is corrosive sublimate, in one instance only allays the suffering; it seems to come on at long intervals, and though it ceases, on the application of the ointment, for some weeks, it still suddenly seizes the person with such intense sensation that he is obliged almost to tear his flesh for relief. In the other instance, hydrocyanic acid much diluted, effected a permanent cure.

When pain ceases, it must, nevertheless, be an object of your care; in very many instances, it is right for you to ascertain whether this has gradually or suddenly taken place; if in inflammation it has suddenly ceased, you must be aware that it may be from mortification; if accompanied with shivering and sensation of cold, however slight, suppuration may be the result; sometimes, as in rheumatism, the pain in the limbs subsides, but in a day or two the heart, or some other organ, is affected, and this has been called metastasis; but, in many instances, I am persuaded in rheumatism, it is the result of an affection of the coronary vessels that supply the heart with blood, and is produced by too much bleeding; for it seldom, if ever, occurs, where venesection has not taken place.—*Lancet*.

17. *Analyses of Opium.* By G. G. SIGMOND.—In the year 1803, Derosne announced that he had procured from opium a peculiar matter, white, crystallizable, and of uniform composition, which he then imagined to be that peculiar princi-

ple in which reside all the therapeutical and toxicological powers by which that drug is so strongly characterized. In the following year Seguin read a dissertation before the Académie des Sciences, in which he pointed out the existence of the most energetic constituent of the drug: he explained the method by which it was to be obtained; he very satisfactorily showed what were its essential and distinguishing characteristics. Here he stopped: and, according to the laws of discoverers, he lost that claim to which he would otherwise have been justly entitled, of being looked upon as the first discoverer, for he did not affix to this substance any name. Had he ventured to call it by any title, to him would have been awarded the merit due to the first observer of that constituent principle which has since been known to us under the appellation of Morphia. To Seguin it is, also, that we owe our acquaintance with meconic acid, although in this, as in the former case, Sertuerner, of Embeck, in Hanover, carried away the honour of the discovery in 1816. The French chemists always speak with some degree of mortification when, with the honesty which should always accompany science, they prove, that if France cannot actually claim the reputation, her chemists were on the eve, and really deserve the merit of first knowing the important constituents of opium. It was, however, Sertuerner, a German chemist, by whose patient labour and industry the real nature of morphine was unfolded: he placed his discovery upon the firmest basis, for he showed that it possessed the property usually attributed to alkalies, of combining with acids, and of forming, when thus united to them, neutral salts. Sertuerner did not hesitate to give to the scientific world a memoir which, of course, attracted considerable attention. Gay Lussac very properly committed to Robiquet the important duty of investigating and substantiating the facts thus announced by the German chemist. To no individual could such a task have been entrusted, whose capability and judgment would be more appreciated than Robiquet. He commenced his labours, and the first question that he felt called on to inquire into was, what was the nature of the substance that Derosne had discovered in the year 1803? It was proved, even by the process that Sertuerner had pursued, that it did exist, but that chemist had not acknowledged it to be a constituent principle of opium: he had given it as his opinion, that it was a submeconate of morphine. The next question upon which Robiquet was to decide was, what was the real nature of the principle which Sertuerner had discovered, and of which he had given a description.

The results of the investigation, most carefully and philosophically pursued by Robiquet, were considered to be highly satisfactory, and have been universally appreciated. His experiments proved that morphia is an alkaline basis, capable of saturating acids, and of forming neutral salts; that the salt discovered by Derosne was not a submeconate of morphine, but that it was a peculiar principle, and that there was also a peculiar acid existing in opium, namely, the meconic. These analyses of Seguin and Robiquet were universally recognised, and, for a time, the inquiry was considered conclusive, until M. Pelletier feeling, that after fifteen years the science of chemistry had put into his hands a greater number of agents, by which analysis might be carried on, determined to become a labourer in so important a field of investigation: he has been followed by Courbe and others. Pelletier's analysis, in 1832, gave us the results which I shall now mention to you,—morphine, meconine, narceine, meconic acid, a brown crystallizable acid, peculiar resin, oil, caoutchoric gum, bassorine, and ligneous fibre. During the last session of the *Medico-Botanical Society*, a paper from his pen, translated by Mr. Foote, announced his observations on paramorphine and pseudomorphine, the latter of which does not always exist. It would ill become me, as having little opportunities of pursuing an inquiry into an analysis of opium, to make any observations upon Mons. Pelletier's views, but I shall confine myself to enumerating those constituents which I myself have seen when obtained, and of describing the outline of the processes by which, according to the first chemists, they are best procured. I have made all the inquiries upon the subject, and have examined into it with all the attention that I have been enabled to give: the difficulties attendant upon real personal acquaintance with all the points connected with it, are such that no one, not superintending all the stages, could undertake accurately to describe the processes, which are only carried into effect satisfactorily by practised chemists, upon a very large scale. However frank and honest may be the communications made by the individuals who conduct

these operations, there must necessarily be many particulars which can only be known by manipulation and by experience. In speaking of the principles contained in opium, I must particularly thank Mr. Morson, of Southampton row, for the kindness with which he has communicated with me; and amongst those from whom I have had occasion to seek information, I must acknowledge him as most willing, and, from the largeness of his operations, very capable of imparting it. There are, indeed, very few in London who have much experience, and it is only from copying one from the other, that much acquaintance with these points is derived.

The constituents which at this moment I am led to recognise as existing in opium are morphia, narcotina, codeia, narceia, meconia, thebaia, meconic acid. How long these may continue to be the sole principles I know not; but in enumerating these I am borne out by the testimony of the distinguished professor in the royal institution of Great Britain, Mr. Brande, who, I observe, in the last edition of his *Manual of Chemistry*, gives them the sanction of his recognition. I have now to explain to you the methods by which these are to be obtained, so that their actual existence may be demonstrated to you. Two of these principles appear to be well-defined alkaloids, at least they possess that striking characteristic of unity with acids, and forming neutral salts. These two are morphia and codeia. Various are the processes which have been enumerated for obtaining them. That of Dr. Gregory and of Dr. Robertson seems to be considered the best. The first step in all cases is the proper solution of opium in water. Muriate of lime is added to a concentrated solution, by which agent the meconic acid, and the very small quantity of sulphuric acid which exists, are thrown down, so that meconate of lime, and a minute proportion of sulphate of lime, fall to the bottom of the solution, in which muriate of morphia remains dissolved. To obtain this muriate of morphia the solution is then evaporated to the crystallizing point. The other alkaloid, the codeia, accompanies the muriate of morphia and crystallizes with it. The muriate of morphia is of a dark-brown colour when it is thus obtained, the crystallized mass is then pressed to get rid of the colour, and the process of crystallization is repeated until it becomes perfectly white. The next step is to obtain, from the two mixed muriates of morphia and codeia, the morphia; this is done by dissolving them in water, adding ammonia, by which means the whole of the morphia is precipitated, but the codeia remains still in solution. This liquor is then evaporated down, and then the muriate of ammonia, the codeia, and any proportion of morphia not thrown down will crystallize; on the addition of caustic potash the morphia will be decomposed, the ammoniacal salts dissolved, and the codeia be precipitated. The codeia is to be purified in ether, from which it crystallizes.

The essential characteristics which mark morphia and distinguish it are, that it crystallizes in prisms from its alcoholic solution, that it is but little soluble in water, that it is insoluble in ether, and that it is perfectly dissolved by potassa or soda; this distinguishes it altogether from narcotina, with which it may sometimes be found, but which is not the case when obtained by the process I have just attempted by description to explain to you; it gives a deep-red colour to nitric acid, and one of the most beautiful blues to muriate of iron by candle-light; though it has more of a greenish-hue by daylight; these tests will fully distinguish it from all other of the alkaloids.

According to the excellence of the opium will be the quantity of morphia contained, about 100lb. weight of the drug will yield from 120 to 150 ounces of morphia, and, according to Robiquet, about six ounces of codeia will be obtained from 100lb. of opium also. The salts that have been obtained by combination of morphia with acids that have been noticed are, sulphate of morphia, bisulphate, muriate, nitrate, phosphate, and acetate; and they are obtained by dissolving the alkaloid in diluted acids. Opium contains three other principles which may be considered neutral, neither possessing acid nor alkaline properties. Narcotina, the salt originally discovered by Derosne; meconia, by Courbe and Dublanc; narceia, by Pelletier; and, lately, a fourth, by Courbe, Thebaia. Narcotina is found very abundant in many varieties of opium, sometimes as much is found as of morphia in others. The other three principles, meconia, thebaia, and narceia, exist in very minute quantities. Narcotina is procured by the action of hot ether upon opium, which extracts this principle in a pure state. It may also be precipi-

tated from a solution of opium by means of caustic potash, taking care not to add more than may be sufficient to saturate the free acid. Narcotina is soluble in the acids, also in alcohol, ether, and the oils, and is crystallizable from them all: it has an intensely bitter taste. Meconia crystallizes in prisms, and narceia in silky crystals: they are obtained from the liquors of the first pressings of the muriate of morphia.

From the meconate of lime, which I spoke to you of as having been precipitated in the decomposition on making morphia, meconic acid is obtained. Meconate of lime is dissolved in concentrated muriatic acid at the boiling point, taking care however, that it is not in actual ebullition: it is then filtered, and is repeatedly treated with muriatic acid, until it is completely destructible by heat. The meconic acid will then be obtained in reddish-brown scales, and to be made perfectly pure and white, it must be united with caustic potash, and a meconate of potash be formed, from which it must be repeatedly crystallized until it is perfectly white; it is then decomposed by frequent treatment with muriatic acid, and thus is obtained a perfectly white and pure meconic acid, which, by boiling, is converted into metameconic acid, by sublimation into pyro-meconic acid. Meconic acid becomes a most delicate test for salts, soon producing an intense red colour.

In the *Journal de Chimie Médicale* for September, 1835, will be found the observations of M. Pelletier on paramorphine and pseudomorphine; but I have had no opportunity of meeting with any English chemist who has gone over the same experiments, and, therefore, I can say little on the subject, but that he states that paramorphine comes nearer to narcotine than to any other of the principles; and pseudomorphine to morphia.

In the *Journal de Pharmacie* for 1833, will be found Robiquet's observations on Dr. Gregory's mode of obtaining morphia, and likewise a translation of the original paper, describing the operation of which I have ventured to give a slight sketch, fully aware that the chemist only can explain fully all the steps. M. Robiquet has borne out the preference generally given to the process. Two advantages seem to result from it: the first, that a larger quantity of morphia is obtained, and the employment of alcohol, always so expensive in this country, avoided. M. Robiquet observes, that the first trial he made convinced him that the opium employed by Dr. Gregory, was of a superior quality to that which has been used in France for some years, and not only that ours contains more morphia, but that the proportion of narcotine is considerably less. He expresses his want of information as to the causes that produce this, whether it be dependent on the species of the poppy, the diversity of climate in which its cultivation is pursued, or upon the mode by which the opium is obtained, or upon some sophistication by adding to the opium obtained from the indigenous plant. In order to satisfy himself, he wrote to Dr. Gregory for a specimen of the opium on which he had operated, and which was immediately sent to him, with an explanation, that, as the muriate of morphia was only employed by the medical men in Edinburgh, he did not attempt to obtain the morphia isolated, but in combination with the muriatic acid; this did not explain the difficulty that Mr. Robiquet had found in obtaining a larger quantity of the morphia. He concludes his paper by stating, that he thinks Dr. Gregory's process merits preference from its economy, its simplicity, and its facility of execution; but that he is inclined to believe that the larger quantity of morphia obtained is in some measure owing to the superiority of the opium which is found in this country; and he calls upon the Society of Pharmacy, where his report was read, to return its thanks for the labours of Dr. Gregory, which merit the approbation of chemists.—*Ibid.*

18. *On the immense quantities of opium sometimes devoured.* By G. G. SIGMOND.—Those who have accustomed themselves to the use of opium can increase the quantity in a most marvellous manner, and can with impunity swallow enough to destroy three lives, under ordinary circumstances. Almost every individual who has practised his profession for some time has seen patients take, from being long habituated to its use, enormous quantities of laudanum, or of solid opium, most generally with a view, at least in this country, of mitigating some suffering to which they are liable; but in Turkey, Dr. Smith tells us that the quantity used by the consumers of opium, who seek from it the peculiar excitement it produces, was generally about three drachms; he himself saw a Turk swallow six drachms,

and this served only to increase his cheerfulness. It was about this portion that an individual took who has acquired very considerable celebrity in this country, from his publication of a little volume which was entitled "The Confessions of an Opium Eater." His ordinary dose was 320 grains; for the first eight years of his indulgence in this habit he took it once only in the week, he chose Saturday night, and his great delight was to attend the Italian Opera whilst under its influence, for he found it to heighten his enjoyment of the music in a most extraordinary degree, or else he sallied forth into the markets of this great metropolis to watch the individuals who throng there on that night to purchase their Sunday's meal, and it afforded him a pleasure of which his description can impart to us but a faint impression. One most extraordinary fact is, that he was able, and that without any considerable effort, to diminish his dose in a most remarkable manner. For three years he had not been content to take 320 grains once in the week, but had taken it daily; but suddenly he descended to 40 grains, so that where he had taken an equivalent to 8000 drops of laudanum, he contented himself with 1000.—*Ibid.*

19. *On Sleeplessness and the means for its relief.* By G. G. SIGMOND, M. D., &c.—Sleep has been aptly defined the repose of the organs of sense and motion, whilst the functions of the body are still carried on. From the connexion between the mental and corporeal functions, the tranquillity and quiet given to the body by the absolute suspension of the action of the voluntary muscles during sleep, conduces to the preservation of the intellect, and the healthy state of the system; and sleeplessness, or vigilance, as it has been termed, is one of the most distressing disorders that can afflict us. Not only does it precede, accompany, and aggravate, many diseases, but it likewise is their cause; the nervous system is overpowered, a train of frightful maladies is induced, and sometimes the seat of reason has been shaken.

Tissot, in his work on the "Diseases of Literary Characters," says, that the aptitude of the brain, to restore by sleep the impaired energies of the functions of the body, may be lost altogether.

Want of sleep is of course a very frequent concomitant of disease, is a most distressing, weakening, and dangerous symptom in a great number of disorders. The causes of morbid irritation which produce and support this dreadful malady are many and complicated, and frequently demand our utmost attention. There are instances on record of sleeplessness the most frightful. Bartholinus has spoken of a case in which hemiplegia kept a person awake for three months; it was attended with a melancholy, or hypochondriacal state, which lasted fourteen months. Gooch gives a singular case of an individual who had never known what pure sleep was, even for half an hour, yet he lived to be 73 years of age, and enjoyed a very good state of health. He fell one day into a kind of dozing, which lasted about a quarter of an hour; but even that was not sound, though it was all the slumber he was ever known to have had. On the other hand, there are some narrations of a most singular kind, of individuals sleeping for weeks, months, nay, even for nearly four years, with very little interruption. The most singular case of this kind is to be found in the 24th vol. of the *Philosophical Transactions*, and it is related by a physician, Dr. Oliver, upon whose sagacity the utmost reliance could be placed, and as there was every opportunity of closely examining the circumstances he relates, there can be very little doubt of the truth of the particulars he there states:—

Samuel Chilton, a labourer, aged about 25, residing at Timsbury, near Bath, was accustomed to fall into a sleep, from which no one could rouse him till after a month's time; on one occasion he fell asleep about the 9th of April; after some days he, remaining in that state, was seen by Mr. Gibs, of Bath, who was sent for; he bled him, blistered, cupped, and scarified him, and used all sorts of external irritating applications, without producing the slightest effect upon him; he appears, however, to have ate, and to have had some evacuation, though no one saw him do either. This was during the first ten weeks, after that period he remained in the same state for seven weeks, during which he made water once, and had one evacuation.

The duration of sleep should be, in manhood, about the fourth or the sixth of the twenty-four hours; children, the younger they are the more sleep they require;

in advanced stage there is more watchfulness. Excess and defect of sleep are equally pernicious to the system, and injurious to the organs.

Obstinate sleeplessness is a malady that preys upon the system, disordering every function: during the darkness, the silence, and the solitude of night, all the causes of conflicting passion, of anxiety, and of corroding feeling, rise up with redoubled energy, and haunt the broken spirit. The heart beats with terrific violence, there is a gnawing about the præcordia, an unnatural glow of heat succeeded by a damp chilliness, involuntary sighing; a sensation of dread and horror creeps over the system; light is most anxiously prayed for, but when it dawns it brings with it no relief. For this sad state, and often do we meet with it, the soothing attention of the medical man can do much, and though perhaps "the drowsy syrups of the East" may not medicine to the mind diseased, still there are numerous dietetic and moral means which relieve this state. Great attention to diet, to the cutaneous perspiration, to frequent ablution, to hot and cold bathing, will aid the effect of hyoscyamus, of camphor, and of æther, amongst the narcotics; besides these, there are remedies taken from the three classes of the diffusible stimuli; there are, likewise, many plants of which infusions, taken at bed-time, are productive of much good, that have no place in our pharmacopœias; amongst these, the *gratiola officinalis* has considerable influence, and also the *salvia officinalis*, the *salvia æthiopica*, and *verbascum nigrum*. In the works of the celebrated Dr. FRANKLIN you will find a familiar treatise on the art of producing sleep, which is not unworthy your attention.—*Ibid.*

20. *Symptoms produced by inordinate doses of opium and the measures for their removal.* By G. G. SIGMOND, M. D.—The stage of excitement, after the administration of opium, having passed over, a state of collapse succeeds. There is usually deep sleep or stupor, which forms a diagnostic feature, and which although it may occasionally be found to follow upon the other narcotics, is most strikingly characteristic of this powerful juice. There is an overpowering lethargic state, from which you may for a moment arouse the individual into apparent sensibility; but he instantaneously relapses into a perfect suspension of his faculties. Delirium very rarely occurs; and although we have on record some cases in which convulsions were present, yet they may be considered as very unusual. Almost all the other narcotic poisons are attended by delirium and convulsions as the ordinary symptoms. Conium, or hemlock, exhibits a state nearer approaching to that of opium than the other narcotics: still, coma and convulsions are, generally speaking, present. Where henbane or hyoscyamus has been taken, that union between coma and delirium which is called typhomania, is observed. Belladonna causes delirium and coma: the delirium is often of an agreeable character, accompanied by uncontrollable fits of laughter, and very often there is no sopor. *Datura stramonium*, or the thorn apple, causes maniacal delirium, with singing and dancing. *Nicotiana tabacum*, or tobacco, excites convulsions and universal tremor. *Æthusa cynapium*, or dog's parsley, is marked by spasmodic pain of the stomach, and difficulty of breathing: *aconitum napellus*, or monk's hood, by maniacal delirium; *helleborus niger*, or black hellebore, is followed by delirium and high irritation; and the fox-glove, or *digitalis*, by delirium and general convulsions: the *strychnos nux vomica* by dreadful agitation and alarm. Extreme cold produces a sopor, and an irresistible sleepiness, that has an approximation to the effects of opium, more nearly than any of the narcotics I have enumerated: and the deleterious fumes arising from burning charcoal cause a somewhat similar state; still it is more nearly allied to asphyxia.

The other symptoms which accompany an inordinate quantity of opium, may be found as the consequences of the narcotics generally, nor do they afford us any very striking diagnostic marks. They likewise vary according to the age, the sex, the habits of the patient, and to the dose that has been taken. Thus, although the face is most generally observed to be pale, there are not wanting instances in which it is described to be flushed. In some cases the breathing is apparently easy, and almost natural; whilst again, in others, it is stertorous, and performed with great difficulty; the pulse is generally feeble and irregular, yet this is by no means a uniform occurrence; the skin is cold, shrunk, and bedewed with a clammy sweat, and has been known, occasionally, to have been imbedded with the characteristic odour of opium; the extremities are very generally cold;

the eyes are closed, and on lifting the eyelid the pupil is found to be dilated, and insensible to the stimulus of light. Vomiting occurs, occasionally, at various periods after opium has been taken. Dr. Crumpe, whose ardent love of science, and whose anxious investigation of truth led him to try numerous experiments, which he has admirably detailed in his inquiries into the nature and properties of opium, tells us that he himself, when trying experiments on the different parts of opium, often vomited up what appeared to him the entire quantity of the medicine he had taken, after its having affected him in a very violent manner. It is very singular that a pill of opium, administered at night, will be vomited up in the morning, after having produced its narcotic effect. This is an observation which Van Swieten originally made.

Persons who outlive twelve hours after opium has been taken very commonly recover, death usually occurring about eight or nine hours after the dose, though there are instances narrated where it has occurred within four hours. The symptoms during life are those, first, of sanguineous acceleration to the brain, in the stage of excitement; and, secondly, of reaction in the stage of venous retardation; and in the third stage of congestion, and where, from the largeness of the dose, the two first states are too transient to be perceptible, the intensity of action upon the nervous system is marked only by the fatal impression produced, the collapse is immediate. Under such circumstances the indications to be followed are to remove the exciting cause, and to obviate the proximate, and these are borne out by the appearances which present themselves where examinations have taken place after death. It is not within the scope of this course of lectures to dwell upon that which morbid anatomy must illustrate to you, but as it is a most important point to be attended to, whether as regards the mode of action of opium upon the system, or the treatment which is to be pursued, I must observe to you that the vessels of the brain are generally turgid with blood, that sometimes a watery fluid has been exhaled from them into the ventricles, and that throughout the cerebral mass there is every mark of sanguineous engorgement. Nor must I pass over the generally observed fact, that the blood is ordinarily found fluid throughout the body.

With regard to the removal of the exciting cause, the first object must be to relieve the stomach of the poison, and this is best effected by mechanical means; the irritation of the fauces, with various stimuli, was at one time the only assistance we could have recourse to; but the introduction into general use of the stomach-pump has completely set aside these unscientific methods of evacuating the opium. Its employment, both for injecting warm water and again withdrawing the fluid, must be continued with perseverance as long as the slightest odour of the drug is perceptible, and this may require some considerable length of time where solid opium has been taken, for the glutinous matter adheres most tenaciously to the coats of the stomach. This instrument is invaluable upon such occasions, for emetics are not to be depended upon; besides which, if they cannot bring the stomach into action, from the paralyzed condition in which it is, they may become sources of very considerable mischief should it recover its tone. As the proximate cause consists in sanguineous congestion, venesection appears to be the next step, and then cold affusion upon the head, neck, and shoulders, as recommended and practised by Dr. Copland, and others. I remember on one occasion being exceedingly struck with the instantaneous effect of cold affusion. A female had been taken into the ward of the *Charing-Cross Hospital*, who had attempted to poison herself with laudanum. I saw that she was marked on my list of patients. I found her in a state of most complete sopor, from which it was next to impossible to rouse her. I enquired what steps had been taken, and learnt that she had been placed in a warm bath. On expressing my surprise that the rule I had always laid down of employing the stomach-pump had not been carried into effect, I learnt that that instrument was unfortunately out of order, and could not be used. I accordingly went down to inquire into the subject in the board-room, directing that in my absence cold water should be freely thrown over the head and shoulders. I could not have been away from the bedside more than ten minutes, and I found upon my return that an extraordinary change had taken place; she was perfectly sensible of surrounding objects, and though she relapsed more than once into the state of sleep, she was roused by the same means, and eventually restored to health. It, however, happened, that on her recovery she

drank largely of gin, became intoxicated, and fell precisely into the same state of sopor, although it must have been upwards of ten days since the complete absence of all the symptoms attendant upon the poison.

The possibility of such a return of the symptoms has been alluded to by Pyl, and, therefore, that they should recur from alcoholic intoxication, cannot be a matter of any very great surprise. Diffusible stimuli, camphor, æther, wine, ammonia, musk, have been found serviceable. It is desirable to keep up muscular motion, and to prevent sopor by applying external stimulants. In some desperate cases the injection of tartrate of antimony into the veins, or into the rectum, has been tried with success.—*Ibid.*

21. *Physiological action of opium.* By G. G. SIGMOND, M. D.—As to the theory of the action of opium on the system, many attempts have been made to explain it satisfactorily: some, like the Abbe Fontana, believe it to arise from a change in the mass of blood producing a higher degree of vitality. Balthazar, Tralles, Dr. Brown, and others, ascribe all its effects to its possession of a peculiar power of stimulating the living principle, or acting upon the excitability of the system. Cullen considered it merely as a sedative, but confesses the difficulty that attends upon such an explanation. Haller attributes to it a power over the muscular fibre, as well as upon the circulation. Barbier, Alibert, Nysten, Merat, Orfila, ascribe to opium a power of debilitating the cutaneous capillary vessels; in consequence of their atony their contracting and impelling power is so lost, that the blood stagnates in those vessels, whilst the heart redoubles its efforts to overcome that impediment. In the midst of such conflicting views it is very difficult to select for your judgment that which best accounts for the phenomena which result from this drug. It appears that the fluidity of the blood is increased when opium has been taken, but whether this is dependent upon some change produced by the drug, or whether it is from the excitement of the heart, or from the circulation through the brain, that the blood has acquired this unwonted fluidity, is very difficult to judge. Every circumstance with which we are acquainted fully proves, that the determination of blood to the brain is excessive, and those who believe that organ to preside over the powers of life, and to be the seat of intellectual vigour, ascribe to the stimulus of the opium acting upon the blood, and determining to the most minute capillary vessels, the extraordinary changes in the exercise of the faculties and the powers of the mind that occur. This is a question which is always approached with the greatest doubt, and with feelings of the utter incapacity of man to unravel the hidden mystery which surrounds every part of this deeply interesting subject, involving, as it does, intellectual development. It is one which, in the darker ages, philosophers were forbid to enquire into, by the superstition and bigotry of the few, but in these days we feel that, with the most profound veneration for that great Creator of all those wonders by which we are surrounded, it is not contrary to his sacred laws that we should explore all his works, and thus our admiration and our adoration be hourly increased.—*Ibid.*

22. *Peculiar effects of opium on some persons, and its effects in combination with other narcotics.* By G. G. SIGMOND, M. D.—There are some instances in which very peculiar effects are produced by opium, and which are ascribed to some unwonted state of the body, or to idiosyncrasy; thus, I am acquainted with a physician in London, who, on taking it, although in a very minute quantity, will have over the surface of the body a scarlet efflorescence; and I have attended a lady whose skin is affected with the most disagreeable tingling, and an insupportable itching, from the same cause; and many similar affections occur in different individuals, which preclude the possibility of administering it. In some cases the exhibition of a purgative will remove any difficulties that would otherwise present themselves. The combination with other narcotics, too, occasionally gives rise to symptoms which, when this drug is given alone, do not occur. United with belladonna, it is apt to produce confused vision, double sight, and sometimes disagreeable hallucinations; with conium, or hemlock, it is also the cause of some cerebral affection; but with hyoscyamus, or henbane, it is united without apparently exerting any but its proper influence; hence they are not unfrequently prescribed together, and generally with advantage. United with soap, it may very properly be administered, and its solubility appears to be somewhat increased.

As it is ordered in the pharmacopœia under the name of *pilulæ saponis cum opio*, it is frequently prescribed where it is necessary to disguise from the patient the peculiar odour and taste: the direction is to take, of hard opium, powdered, half an ounce; hard soap, two ounces; beat them together in a uniform mass; as five grains of this mass contain one of opium, the usual dose is five grains, and a pill should rarely weigh more than that quantity. There is a good formula in the Edinburgh Pharmacopœia, called *opiatæ pilulæ*, or *thebaicæ*, in which the drug is concealed by extract of liquorice and pimento berries, of which five grains contain half a grain of opium; and the Dublin Pharmacopœia disguises it by purified storax and saffron, in a pill called *pilulæ c. styrace*, five grains containing one grain of the drug. The Paris Dispensatory has a recipe for *pilulæ cynoglossæ*, which contains opium and the seeds of *hyoscyamus*, nine grains containing one of opium. The great advantage of being aware of these formulæ is, that you may be enabled to prescribe the compounds either of the Edinburgh or Dublin Pharmacopœias, as they are readily made up by the druggist, whenever any difficulty arises in ordering the *pilulæ saponis cum opio*, for sometimes you will find it necessary to conceal from your patient that you are exhibiting this remedy. Various are the objections which you will hear occasionally raised against it, and sometimes they are of so very trifling a nature, that it becomes your duty not to listen to them. It, however, sometimes does occur, that a patient has, from experience, found bad effects from the drug, and is fearful of their recurrence; you must, therefore, form your judgment from duly weighing all circumstances. The *confectio opii* is a substitute for the mithridate of the old pharmacopœias, and is formed of hard opium powdered, six drachms; long-pepper, one ounce; ginger-root, two ounces; caraway-seeds, three ounces; syrup, one pint; rub the opium with the syrup made hot, then add the opium, the effects of which are somewhat diminished by the aromatics, as a sedative, but are increased as a stimulant. Under this form it has been preferred by some who have become habituated in this country to its intoxicating influence.—*Ibid.*

23. *On the employment of opium in fevers.* By G. G. SIGMOND, M. D.—In those states to which the name of fever is given from the alteration which takes place in the natural heat of the human body, great caution is necessary as to the stage, the symptoms, the form, and the previous treatment of the disease. Although the great division of continued fevers into inflammatory, and low fevers, or, as they are scientifically termed, into *synochus* and *typhus*, must be acknowledged to be perfectly correct, as they are found to be prevailing in all countries, and amongst all people, still almost every continued fever is ushered in by some inflammatory symptoms, although they may be so slight and transient as to be scarcely perceptible, and likewise almost every fever has at its termination some marks of debility. That both these forms have become in this country, either by the more immediate recourse to medical assistance, or by an improvement of the habits of life, much milder, and much less fatal, the records of our art, as handed down to us by the most experienced men, completely prove. The practice of immediate blood-letting so much extolled by our predecessors, at the onset of inflammatory fever, is abandoned upon the authority of all the greatest men of our time, and that which more immediately preceded it. The late professor in the chair of physic in Edinburgh, to whom the great number of the enlightened physicians of the present day owe much of their practical knowledge, I mean Dr. Gregory, used to state in his lectures, and he sanctioned the publication of some notes which contained this opinion, "that he was convinced more and more every day of the general inutility of blood-letting in continued fever; though it might occasionally be necessary when the inflammatory symptoms were very high, such symptoms were very soon succeeded by great debility, which this evacuation always rendered more dangerous. He had sometimes been led to employ it, from the apparent urgency of these symptoms, but had often occasion to regret it afterwards. A complete revolution," he adds, "seems to have taken place in this respect, especially amongst practitioners here. A candid old gentleman confessed to me that he does not employ the remedy now above once for thirty times he did formerly." In most large towns this opinion is decidedly prevalent, Dr. Clark of Newcastle, and others, concur in expressing it; it is not the same, however, in the country, or in the army and the navy, where the constitutions of individuals are much more

robust, and inflammatory symptoms are much more likely to exhibit themselves in their most acute form. Even in this great metropolis, the physician must be struck with the different appearances of fever, in different districts; thus, the diseases that presented themselves to me, at the Marylebone General Dispensary, were generally much more acute, and the inflammatory symptoms much more prevalent, than those which I attended at the Charing-Cross Hospital, for the patients in the former instance lived in larger houses, on fuller diet, and in more open streets, than those who, coming from a closely-peopled neighbourhood, near the river and its fogs, were in a much more debilitated state. The low fever, or typhus, which, from the excessive havoc it committed, was formerly so much dreaded, and was called malignant, putrid, pestilential, has lost much of its virulence in these days, and we scarcely ever see cases marked with those dreadful symptoms we find mentioned formerly; much of this is owing to personal cleanliness, and to the state of our apartments and houses. Such was the dreadful neglect of attention to dress, in the days of the Stuarts, that artificial odours were absolutely necessary for every person going into society; perfumed bags and pillows, scented gloves, which breathed forth rue, rosemary, cedar, and cinnamon, were obliged to be worn. The description of the celebrated Prince of Conde, with his uncombed hair, and untied cravat, and accumulated dirt, is read with astonishment in the present age. The floors of the rooms were never washed, they were generally strewed with rushes, which were seldom removed; tapestry covered with the dust of ages, filthy canopies, hangings inaccessible to purification, were all food for typhus fever, whilst the little narrow gothic windows scarcely allowed a breath of air, or the light of day, to restore healthy circulation to the confined space.

In the first days of inflammatory fever, opium is not to be administered, although various symptoms may present themselves which might almost tempt even the wary practitioner to employ it; in the beginning, the increase, or the height, of this disease, this medicine is only calculated to do mischief: it must then be combated by antiphlogistic means, by emetics, by purgatives, by diaphoretics; before the twelfth day it should not be administered, and that is the earliest period at which, from the concurrent testimony of the greatest of our authorities, that it can be employed. The various theories that have been advanced to account for fever, have in many instances led to much mischief, and have caused us to abandon the cautious but successful practice of those who have preceded us, and probably, also, "pressure from without" has had considerable influence. The people of this country are very anxious for quick results; they vibrate between a love of taking physic, and a dread of its effects; when they are in health, they are constantly quacking themselves, and when they are ill, they are afraid of the remedies that are of the greatest service to them, and more particularly if they require time to produce their effects. Hence they are likely to be imposed upon by the ignorant pretender to science, and to annoy their well-informed medical attendant by their preposterous expectations. To watch a fever, and to assist the efforts of nature, is seldom permitted, so that, in the greater number of cases, that which would be what our forefathers called a pure fever, is complicated with a variety of morbid affections, and hence spring up gastric, gastro-enteric, pulmonic, cephalic, hepatic, or cardiac fever, and thus, merely because one organ of the human body has some predisposition to disease, which is developed during the period that the nervous system has lost its equilibrium, that which is only a symptom is treated as a cause; and hence a loose, vague, and mischievous practice arises; one particular organ excites all the attention, the disease is treated probably as if seated in that particular organ, and the real fever is considered a symptomatic. The violent head-ache, and the delirium of fever, for which an opiate is, about the fourteenth day, almost a specific, are often considered as an affection of the brain, and blistering and bleeding are often had recourse to, though these symptoms are connected with general debility, requiring opposite treatment; the cough that sometimes accompanies the whole course of continued fever is often supposed to indicate pulmonic disease, and in some instances has, from the expectoration that with difficulty is brought up in consequence of weakness, been pronounced to be a proof of phthisis pulmonalis. For this cough, in the latter stage, a few drops of laudanum, in almond emulsion, act as a charm, whilst at the commencement it is highly prejudicial. The want of sleep, as well as the

delirium in the commencement, calls for no opiate, and need not be a subject of much anxiety, but as soon as the bowels have been unloaded, and the first period has passed, it may be administered; previous to this, linen dipt in rose-water, applied as Sydenham has prescribed, "cold to the forehead and temples, will prove of greater service than any opiate." If emetics have not been given early in continued fever, particularly where vomiting has occurred, diarrhœa supervenes, and then the greatest discrimination is necessary in the administration of opium, and I confess that I have felt much uncertainty in numerous cases that I have attended in hospital practice.

A number of patients come into a hospital in the last stage of fever, and diarrhœa is one of the most common symptoms, of course betokening the greatest debility. These cases have been variously treated, according to the best judgment of different individuals, with whom there is no opportunity of conference to learn what the early symptoms were, or what has been the practice pursued, and hence the physician is at some loss to form his judgment whether to check the diarrhœa, or to consider it a critical evacuation; and, again, another consideration is, whether by so checking it we prevent the natural secretion from the intestinal canal. In the greater number of instances, I believe that opium, properly given, that is, in small doses, in tincture, or in wine, and often repeated, is the safest and most judicious plan to pursue. When tremors and subsultus tendinum are present, they indicate a state of extreme debility, and require the use of wine freely, and large doses of opium, often repeated; as soon as the dose has lost its influence, another of equal magnitude must be given. In general, the patient bears a full dose at once, in this state, better than the smaller quantity, which I would recommend to check diarrhœa. If the heat of the body be much above 98, which may be considered the natural temperature (and the best mode of ascertaining it precisely is by placing the bulb of a small thermometer under the tongue), or if the skin be dry, opium will not produce that effect which is so desirable in fever, and in most instances will rather tend to increase the heat, the agitation, and the restlessness. This may often be obviated by gently sponging the body with weak vinegar and water, from which the chill has been taken, caution being used to prevent any exposure of the body too suddenly to cold; by such means the heat of the surface will be diminished, the skin become moist, and a gentle perspiration be excited, and Dr. Currie even advises, "after opium has been exhibited, when the inordinate heat prevents its sedative operation, to use the tepid or cold affusion, which will be found safe and salutary." I may observe to you, that the stimulus of heat on the surface of the body will, in a vast number of diseases, prevent the effect of opium as a sedative, and thus, often, in the evening, during the exacerbation of fever, it will prove injurious, whilst it may most successfully be given at two or three in the morning, after the patient has lost some of the heat of surface; the sudorific effect of opium is then perceptible; the compound for which Dr. Dover, a singular specimen of the half-quack, half-physician, has been celebrated,—the *pulvis ipecacuanha compositus*,—in the dose of ten grains, containing one of opium, one of ipecacuanha, and eight of sulphate of potash, mixed together, is, as a diaphoretic, of the greatest value. A moist tongue is absolutely necessary for the exhibition of opium, and more especially in its solid form; and therefore when we perceive, as is often the case in the last stages of continued fever, that it is dried and glazed, we cannot expect to derive any advantage from its employment; indeed, in that state of tongue, under almost all circumstances, it is contraindicated, excepting where any hemorrhages, or fluxes of blood, occur, for during those states of body we are often obliged to have recourse to an opiate, and we find that the state of the tongue need not influence us in any way in its exhibition.

In typhus fever, where the system must be supported, wine is the best diffusible stimulus, and, combined with it, cinchona; the next is opium, but to aid and increase its effects, æther, camphor, ammonia, and the diffusible stimuli, must be added.

The ancients seem to have had recourse to opium in intermittent fever, and Galen, when discussing theriaca, speaks of his own experience of its good effects. Alexander Tracian recommends it in quartans; certainly the moderns have with great exactness marked the period at which it is given with decided success, namely, about two hours before the expected paroxysm, and again just as the hot

stage comes on; but this mode of practice has been the result of much consideration and of protracted discussion, in which Dr. Lind, M. Duchanoy, Bergeret, and Dr. Trotter, assisted by their experience and observation. The use, however, of bark and of sulphate of quinine is so general, that opium is less required now than it formerly was; but the administration of ten minims of the tinctura opii, half a drachm of spiritus ætheris nitrici, in an ounce of mistura camphorata, about two hours before the expected paroxysm, and again repeated just as the hot stage commences, will generally prevent the advance of the paroxysm, or render it much milder or shorter. Thus it becomes a most important auxiliary to bark, and where that valuable febrifuge cannot be taken, it may prove successful alone.—*Ibid.*

24. *On the employment of opium in the Phlegmasiæ.* By G. G. SIGMOND, M. D.—In the class of diseases called inflammatory, or phlegmasiæ, great caution is always necessary in the employment of opium. To lay down, as some writers have done, a general rule that it is very prejudicial, is at once unscientific, and contrary to the opinion of some very acute and able men. Dr. Armstrong, in the first volume of the *Transactions of the Associated Apothecaries of England*, has discussed this subject, and described his own practice: his views have excited some attention, and he has found many followers. He was accustomed, in acute inflammation of the peritoneal coat of the stomach, to see the patient bled to complete relaxation, or syncope, and on his recovery from that state to administer at least three grains of opium, in the form of soft pill. He visited his patient four hours after; if pain existed on pressure on the abdomen, with a hot skin, a quick, jerking pulse, he repeated the bleeding in the same decisive manner, and then prescribed two grains of opium, and four of calomel. He states that after this treatment refreshing sleep and free perspiration portend the recovery; where these do not occur, a third venesection, with one grain of opium, and two of calomel, he thinks necessary. Dr. Graves, in the *Dublin Journal*, has given some observations on the use of opium in inflammatory disease, and more especially abdominal phlegmasiæ. All those who have employed opium in these diseases have generally recommended previous blood-letting to a considerable extent, and, certainly, it is only where this has been judiciously carried into effect that any success has attended it. The secretions are too often locked up by its use, and, besides, the disease is masked, and sometimes proceeds to a fatal and unexpected end.

The greater number of authorities are opposed to the administration of opium in the earlier and more active states of inflammation, more especially where the great organs upon which the actions of life depend are compromised; but the same individuals who have thus given us the best precepts, admit of its exhibition with a due degree of prudence and caution after those free and copious evacuations, which long experience has taught to be absolutely necessary. In cerebral and pneumonic inflammations, the worst symptoms will be aggravated, unless active venesection has preceded its use; where a remission has taken place, in consequence of such treatment, opiates may safely and advantageously be administered. Where the circulation is accelerated, and a determination to any viscus has occurred, accompanied by pain and tension in its vicinity, and where there is the peculiar hard and wiry pulse which denotes that increased vascular action has taken place, we have no right to trifle, in any way, with the case; we must have recourse to depletion, and avoid the use of opium, and although there may be opinions at variance with the doctrine, even in simple catarrhal affections, at their commencement, its use is contraindicated: but although this is the case in inflammation of the viscera, or the mucous membranes, it is not so when the muscles and the joints are thus attacked.—*Ibid.*

25. *On the employment of opium in Rheumatism.* By G. G. SIGMOND, M. D.—In rheumatism in its most acute form, I look upon opium as a specific; and this lesson was taught me by watching the practice of my revered preceptor George Pearson, and adopting the treatment which I saw uniformly successful at *St. George's Hospital*. To him I must always look with respect,—“Hunc illum video mihi principem, et ad suscipiendam, et ad ingrediendam rationem horum studiorum.” He was a man of very considerable practical knowledge; but in the treatment of no disease did he exhibit more masterly skill than in that of rheumatism, which he uniformly cured by means of opium, exhibited sometimes in the form of the

pulvis ipecacuanha composuit, ten grains every six hours, and sometimes combined with calomel, two grains of which, with one of opium, he was in the habit of administering every four hours, until the mouth was very slightly affected.

The sudorific plan was, however, more generally pursued by him; the combination with calomel only when there were symptoms of disturbance of the chylopoietic viscera, or a marked plethoric state of the system. I have constantly found that those of his pupils who followed his footsteps have been equally successful. You will find, in the volumes of the *Medical and Physical Journal*, many instances of the good effects of this practice detailed by those who tried his plan. You will observe, in the volume for 1812, some cases related by Mr. Scott, with some very judicious and valuable remarks upon his skilful preceptor's maxims. Dr. Pearson placed no reliance whatever on blood-letting; to produce the most copious perspiration by the Dover's powder, seemed, generally speaking, to be his wish, and upon this he rested his means of cure, and the good results were most apparent.

Bear in mind, however, that if you have commenced your treatment of rheumatism by blood-letting, you must not attempt to administer opiates in any form; as Dr. Rush observes, you thereby only protract the symptoms; and, indeed, Sydenham, with his usual sagacity, perceived this; he was a decided advocate for bleeding, and had no faith in the employment of opium, "the use of which" he says, "requires more copious bleeding, and, therefore, though the pain be ever so violent during the whole course of the disease, yet when I intend to effect the cure solely by bleeding, I judge it highly necessary to refrain from opiates, because the disease is fixed thereby, and does not yield so readily to bleeding; so that when such medicines are given too freely, bleeding must, in consequence, be oftener repeated than is otherwise necessary; besides, in the height of the disease, they do not answer the expectation we have conceived by them." These important doctrines have been held sacred by Cullen, by Van Swieten, by Pringle, and by Rush; and the favourite mode of treatment of acute rheumatism is by blood-letting. Experience has, however, taught me the value of Dr. Pearson's plan, and many of you have had opportunities of witnessing its success. It does not leave debility behind it, nor does chronic rheumatism supervene. I have sometimes found the wine of the root of colchicum, half a drachm, a scruple of carbonate of magnesia, a drachm of spirits of nitric ether, in an ounce and a half of camphor mixture, every eight hours, of essential service, after the Dover's powders have produced their excretory influence, more particularly when some slight and transient pains have occurred after the acute stage has been cured. Some individuals, and those, too, whose opinions are worthy of the deepest respect, still, as I have observed, prefer blood-letting; and they state a fact which is most true, that just before the sweating bursts forth, the pain becomes almost intolerable; this, however, is relieved immediately that the skin is influenced.—*Ibid.*

26. *On the administration of opium in Gout.* By G. G. SIGMOND, M. D.—In gout opium may be occasionally used to allay excessive pain, in the first paroxysms, occurring in early life; but, at later periods, most practical men are adverse to it. This disease is evidently much less frequent than it formerly was in this country. I can remember the time when very few persons, of a certain condition in society, had not some occasional fit of the gout. The country gentleman, a species now almost extinct, was of no estimation amongst his domestics and tenants, unless he now and then was visited by a few twinges. This most probably, depended on the enormous quantities of wine occasionally drunk, and the life of ease which was passed. The *Treatise on Gout* by Sydenham, is the most masterly medical production that ever was penned, although written with a modesty and diffidence rarely to be found. He was himself for thirty-four years afflicted with it, and his immoderate application to this treatise, singularly enough, occasioned the severest fit of the gout he ever had. My own experience is, I must acknowledge, not sufficient in this disease to lay down any decisive doctrine, such as that I have delivered when speaking of rheumatism; but I have seen very beneficial effects result from the use of Dover's powders. My own mode of treatment has been, as I shall hereafter have occasion to tell you, by means of colchicum, which, I think, cautiously and warily administered, is a specific remedy. In gout in the stomach, or where there is an atony of the system, opium becomes a very important remedy, and affords the surest relief.—*Ibid.*

SPECIAL PATHOLOGY AND SPECIAL THERAPEUTICS.

27. *On the colour of matters discharged from the Bowels.* By PROFESSOR GRAVES.—The colour of matters discharged from the bowels is subject to very great variety. In some cases they are clay-coloured or whitish, somewhat like barm; and I have seen them still whiter, and approaching the hue of milk. It is in cases of the latter kind, where the discharges are of a milky appearance, that persons have been said to pass chyle, and their emaciation has been attributed to a deficiency of nutriment depending on this cause. This, however, is not the fact: in some cases of chronic dysentery and diarrhœa, a fluid-whitish discharge takes place from the rectum, but this is not chyle, it is only the changed mucous secretion of the irritated portion of the bowel. It is very curious to observe what different products the same set of secreting vessels will give rise to, according to the mode in which their vital action is affected.

In other cases the discharges from the bowels consist of fatty matter, which bears a strong resemblance to wax, or adipocire. Again, we may have them of a very dark, or even black, colour. I have seen the stools quite black in particular forms of dyspepsia. Some time ago I attended a gentleman at Drumecondra, who exhibited this change in the colour of the intestinal secretions to a very remarkable degree. He was a very large man, accustomed to eat and drink very heartily, having, no doubt, a very capacious stomach and bowels, and a great quantity of fluids and solids. I mention this in order to give some explanation of the enormous quantities of this black fluid which he passed by stool and vomiting. After complaining for a considerable time of dyspeptic symptoms, he got an attack of vomiting; and as he drank freely of diluents during the act of emesis, the quantity of this black fluid which he threw up was amazing; indeed, I might say, without exaggeration, that he vomited by the gallon. With this he had eructations of sulphuretted hydrogen to such an extent, that it was almost impossible to remain in the same room with him. His tongue was as black as ink, and though frequently cleansed, resumed in a short time its former hue. He also passed an enormous quantity of the same stuff by stool. This matter I ascertained, by numerous observations and experiments, to be a secretion from the mucous membrane of the bowels, and not depraved bile, or blood changed by the acid secretions of the bowels. Black stools may also depend upon the presence of other matters, as in case of *melæna*. *Melæna* consists of a discharge of grumous blood from the intestines, either with or without black matter. The following is the way in which it occurs. Blood is secreted slowly into the intestinal tube; while it remains there it is acted on by the acid secretions of the intestines, the effect of which is to change the colouring matter into a black, and in this state it is passed by stool. Again, there are other cases in which the discharges from the bowels are found of a tarry and viscid consistence, and having a greenish-black appearance: this would appear to be connected with a vitiated state of the biliary secretion.

I have spoken here of three species of black discharge, each of a different kind and requiring to have a distinction made between them for practical purposes. Now it is said, if blood be present, you can easily recognise it by putting a portion of the discharge, inclosed in a small linen bag, into warm water, when, after remaining some time, the linen will be stained of a reddish colour. If you take a portion of the tarry discharge, and drop a little of it into water, it will communicate to it a yellowish stain. On the other hand, the black fluid, which consists of vitiated mucous secretion, will not impart either a red or yellow tinge.

I may further observe, that various subjects used medicinally communicate a particular tinge to the alvine discharges. Thus acetate of lead, when it meets with sulphuretted hydrogen in the intestines, changes the stools to a black colour. Again, many of the salts of iron have the same property. Other substances, such as logwood, bilberries, &c. impart to them a red tinge, while the continued use of chalk mixture is apt to render them whitish or of the colour of pipeclay. This is apt to give rise to suspicions of the existence of obstruction of the liver; and in one instance I was deceived for some time by it myself. With respect to the greenish-coloured discharges, they are those which are most frequently met with, particularly in children, and are therefore entitled to a greater degree of con-

sideration. There is nothing more common than to meet with cases of this green discharge during the period of infancy; and I regret to state that a great deal of error has prevailed on the subject. Greenish stools are generally looked upon as a sign that the child's liver is out of order, and as an indication for giving calomel. This, however, is by no means true: they not unfrequently depend upon irritation of the intestinal mucous membrane approaching to inflammation. The proper mode of treatment here consists in adopting measures calculated to remove irritability. In such cases, warm baths, the application of rubefacient liniments to the abdomen, the use of antacids, such as chalk mixture, the carbonates of soda and ammonia, small doses of laudanum, and hydrargyrum c. cretâ with Dover's powder, form the best remedies; and their operation will be very much assisted by a careful attention to diet. You will sometimes, it is true, meet with greenish discharges in adults, but then they are not so fluid as those of children, nor are they attended with the same irritability of the gastro-intestinal mucous membrane. Here the best plan of treatment is the Abernethian: blue pill at night, and a mild aperient in the morning, will be sufficient to correct the intestinal derangement, particularly if assisted by a well-regulated diet, and exercise in the open air. But in children the greenish discharge is often of a much more acute character, and more closely allied to inflammation, or rather irritation; although in some cases it may go on for a considerable time without producing any actual disorganization. It is on account of the property which calomel and other mercurials, exhibited internally, possess of causing irritation in the first instance, and if pushed farther, inflammation of the mucous membrane of the intestines, that they are also apt to produce discharges from the bowels, copious, fluid, and mixed with green mucous flocculi, resembling closely-chopped *spinage*. Sometimes the dejections consist of this green mucus nearly unmixed with any thing else, and then they appear like semi-fluid boiled *spinage*. Now most practitioners think that this green colour is derived from bile which the mercurial has brought down in unusually great quantities from the liver, excited to a more energetic act of secretion. It has nothing to do with the bile in many cases, but is entirely derived from the irritated membrane of the intestines. Long ago I pointed out, and was the first to point out, this fact in the Dublin Hospital Reports. It has very important practical bearings.—*Lond. Med. Gaz.*, August, 1837.

28. *Treatment of Gonorrhœa*.—M. VELPEAU considers a mixture of balsam copaiva and cubebs as the best internal remedy for gonorrhœa. The following is his formula for this mixture: R. bals. copaib. 3ij.; pulv. pip. cabebæ 5iv. to 5vj.; gum. opii. gr. ij.; to be formed into a paste with a little magnesia, and the mass divided into six parts, one to be taken morning, noon, and night. Three doses, he says, is usually sufficient to effect a cure. The discharge is usually arrested the second day; but if the remedy is stopt, the discharge will return. He therefore, generally, after the first dose, allows the patient to abstain one day from the medicine, and resumes it again the fourth day, and continues it three days; then one day's rest is again allowed, and the medicine recommenced the eighth day, and continued four days.

M. Velpeau has tried the tincture of iodine so lauded by M. Broglia, an Italian surgeon, the balsam of styrax and the tannin, and has not found any of them worthy of confidence. The same has been the result of his experiments with gunpowder mixed in brandy, a popular remedy in the French army, and with its several ingredients separately.

M. Velpeau reposes but little confidence in antiphlogistics as an inclusive method of treatment, though he considers them as often valuable and efficient auxiliaries.

Mercurial frictions M. V. considers useful when the urethra is indurated, presents nodosities, or there is reason to suspect ulcerations in this canal, but they are alone incompetent to effect a radical cure of gonorrhœa.

The successive application of small blisters to the space between the root of the scrotum and the anus, M. V. considers useful in old cases, but ought to be resorted to only as an auxiliary measure, or in certain cases.

As to resolvent frictions with iodine, &c. M. V. thinks that they will be found useful in a few cases, and as auxiliary means of treatment.

Acetate of lead in solution, wine and water, pure wine, and other astringent

injections, M. V. considers as more or less efficient in the cure of gonorrhœa. In cases of long standing M. V. asserts that a solution of sulphate of zinc, one grain in a mucilaginous decoction, to be productive of remarkable benefit. The balsam of copaiba, as an injection into the urethra, also sometimes effects a cure in five or six days. The solution of the acid nitrate of mercury, much eulogised recently as an injection, M. V. has found injurious instead of beneficial. The nitrate of silver in solution as an injection, has, on the contrary, been highly useful in old cases; but M. V. has derived most advantage from it when combined with a methodic compression of the urethra.—*La Presse Médicale*, 18th and 25th Jan., 1837.

29. *Treatment of Tinea*.—The following method of treating tinea is recommended by Dr. SCHNEIDER. A circumscribed portion of the eruption is covered with Jasser's ointment, composed as follows: R. sulphur. purificat. vitriol alb aa ʒij.; axung recent ʒvj.; M. F. unguent. In a few days the crusts begin to split, and soon fall off; the secretions change their character, and a cure is rapidly obtained. A mercurial purge is given every eight days, and the child takes for drink a decoction of the woods. The mean duration of the treatment is from four to five weeks.

30. *Cure for Foul Breath*.—M. CAVARRA has uniformly succeeded in curing by means of the following gargle, the foul breath which arises from a morbid condition of the mouth. He was led to its habitual employment by the complete relief it afforded in a case of foul breath from mercurial salivation. R. sulph. alumin. et potass. ʒij.; aq. puræ ʒiv. M. Ft. gargarism.

31. *Influence of Vaccination on Hooping-cough*.—Experiments made at the hospital for children in Paris, tend to show that vaccination exerts no control over the progress of pertussis. Ten children labouring under this disease, who had never been vaccinated, have been admitted into the hospital just named within the last four years, and of these nine were vaccinated. Pustules were regularly developed, but the hooping-cough was in no respect modified by the vaccine disease.—*Bull. Gén. de Thérap.*, 30 July, 1836.

32. *Mercurial Ointment for the cure of Chilblains*.—Dr. DESGRANGES has employed the mercurial ointment for the cure of chilblains with the happiest effects. The parts being first rubbed with the ointment, are then covered with a piece of linen spread with the same. M. G. often weakens the common ointment by adding simple cerate, in the proportion of one or two drachms of the former to an ounce of the latter.—*Journ. de Méd. Prat. ou Recueil des Travaux de la Soc. de Méd. de Bordeaux*.

33. *Tannate of Lead in Gangrenous Sores*.—Dr. TORR has employed the tannate of lead in several cases of gangrenous sores, with marked advantage. The preparation may be made by pouring a solution of acetate plumbi drop by drop, on a decoction of oak bark, as long as any precipitate forms. The precipitate is then collected and spread on linen, or united with lard in the proportion of two drachms of the former to an ounce of the latter.—*Gaz. Méd.*, Jan. 1837, and *Graefe und Walter's Journal der Chirurgie*, &c. B. xxiv.

34. *Remedial powers of the Aconitum Napellus in Headache*.—W. C. RADLEY in a communication to the *Lancet*, (Sept. 23, 1837), extols the efficacy of the extract of aconite in the cure of nervous headache, especially when it occurs in delicate and nervous persons. The form in which Mr. R. administers the remedy is in pills in doses of one grain repeated every hour until relief is obtained.

35. *Artificial respiration during convulsive fits in children*.—Dr. LAWSON CAPE is of opinion that in the asphyxia that is frequently met with during a convulsive fit in young infants, many a child has been lost,—after the long-suspended act of respiration has ceased entirely—from the attendants limiting their measures to hot baths, frictions, cold water splashings to the face, stimulating applications to the nostrils, &c. &c., when artificial inflation of the lungs, with the alternate expulsion of the air by pressing the chest and abdomen, would have restored the lost

function, and recovered the child. Dr. C. relates the following case, illustrative of his opinion:—"On the 20th March, 1837, an infant in Nottingham Place, five days old, had been in perfect health up to the moment that he was suddenly seized with a most severe attack of convulsions, the cause of which appeared to be the overloading the stomach the preceding evening. The fits began by the muscles of the eyes and face being thrown into violent clonic contractions, producing the most frightful contortions of the features; the pupils were dilated, the whole face and head turgid, as if the veins were going to burst, and of a deep blue, or rather purple, colour. The respiratory muscles next took on the convulsive action, and caused the greatest oppression in the breathing; indeed the respiration was *completely stopped in most of the fits*, and recovered, after a frightful interval, by convulsive gasps and sobs, followed by deep sighs. The other muscles of the body and limbs then followed, and the whole muscular system became involved in the spasm.

Between half-past, 8 A.M., and 9, P.M., the infant had thirteen fits, ranging in duration from a few minutes to three quarters of an hour.

"The main indication in the treatment was to get the bowels to act, and to relieve the pressure on the brain. The child had been put into a hot bath by the nurse, which was repeated during the second attack, without apparent benefit. A leech was applied on the frontal bone, near the fontanelle; half a grain of calomel and a grain and a half of jalap, with a tea-spoonful of castor-oil, were given every four hours, and the lower part of the bowels repeatedly evacuated by injections of soap and water and castor-oil. The strength was kept up by injections of jelly, with a few drops of sal volatile or brandy in them. After the twelfth fit, the bowels acted for the first time from the higher intestines copiously; after which there was only one mild though long seizure, when they entirely ceased; the child went to sleep, and was perfectly well the next day, and has remained so ever since, without the slightest symptom of any return.

"The whole case shows to what extent functional mischief may affect the brain and spinal column, excited by sympathetic irritation, without any inflammation or change of structure, for the fits ceased almost immediately after the operation of the medicine administered by the mouth; as, though the enemata emptied the large intestines, this did not have any effect upon the symptoms, the obstruction seeming to be in the *upper* portion of the canal.

"The pressure produced upon the brain was such that respiration was entirely suspended during the greater part of the fits, and even the action of the heart could not be felt for more than ten minutes in the third and twelfth fits, and the child lay to all appearance dead. It was at such times that I proceeded to restore the suspended functions by artificially inflating the lungs by breathing into the mouth of the infant from my own, closing the nostrils, and compressing the thorax after each inflation; observing the natural periods of frequency as much as possible. I am quite convinced the child would have been lost, had it not been for the artificial aid thus afforded to nature in the severe struggle, till the offending matter was expelled. By means of the artificial respiration, the colour (especially of the face and lips) turned from purple to red, but still there was no breathing, till a convulsive gasp announced the termination of the fit.

"I am aware that some have recommended a tube to be passed into the larynx, in preference to breathing into the mouth; and also many have objected to the employment of one's own breath, as the expired air is loaded with carbonic acid, and deprived of a portion (though a small one) of its oxygen. The success of the plan I employed, however, is quite sufficient to justify its use, and it is much more easily effected than by means of the tube, which has sometimes seriously injured the soft parts, and is too readily displaced. A purer air would no doubt be more proper, but unless its temperature could also be kept up to that of the human body, we should lose one of its restorative properties, of perhaps as much consequence as the other. In the cases where artificial respiration was kept up in animals under the influence of narcotic poisons, by Sir B. Brodie, as detailed in his Croonian Lectures, the temperature of the air employed was thus artificially elevated; but in the hurry and confusion of a still-born child or a convulsive fit, there is no time to make the necessary preparations. What I would most wish to insist upon, is the necessity of perseverance in such instances; and perhaps the history of the case I have given may induce others to persevere in the same manner *to the very last (lateat scintilla forsitan,)* and thus perhaps, as in this instance, restore an only child to its anxious parents."—*London Med. Gaz.*, Oct. 1837.

36. *Tubercular Leprosy*.—An interesting paper on this subject was read to the Medical Section of the British Association, at their meeting at Liverpool, by Dr. HANCOCK, who sojourned many years among the Indians of Guiana:—"The first part of Dr. H.'s paper went to show that the disease in question has been usually confounded with elephantiasis, or what is termed the Barbadoes leg and Siam disease; in which the skin and soft parts about the leg and ankle become so enlarged as to bear a close resemblance to the leg and foot of an elephant—a local disease confined to the affected limb, and perfectly distinct from the true *Lepa Arabum*, in which the whole body, or the entire mass of fluids and solids, appears to be implicated.

"In treating of the causes and symptoms of the disease, Dr. Hancock thought that it obviously consisted in a vitiated condition of the blood and serous fluids; but this appeared to be connected, either as cause or effect, with obstructions of the absorbing and secreting vessels; this, together with a peculiar predisposing diathesis, determines the form of the disease. The obstruction and a faulty secretion produce serous deposits under the skin, forming the tubercles, knobs, or indurations, which soon characterize the disease: in proportion as they increase in number and magnitude, the circulation, with the absorbing, secreting, and depurative processes, become daily more obstructed. The process being slow and gradual, the humour solidifies almost as fast as it transcends. The tubercles are of a copper or leaden colour, and more numerous on the legs and thighs. There is stiffness of the eyelids and thickening of the palpebra: the voice becomes hoarse and nasal, and the respiration more or less affected. Varicose veins and knotty pustules are observed about the root of the tongue: and in the advanced stage the whole countenance becomes distorted, full of knobs and tubercles, and of a hideous aspect. In the last or ulcerative stage, the hairs fall off from the eyelids, eyebrows, chin, and other parts; the toes are swelled, and crack with dry fissures, and the skin becomes quite callous and insensible. A corruption of the whole mass of humours, and general disorganization of the solids, ensue; hectic fever supervenes, and terminates the existence of the miserable sufferer. In some cases a few solitary symptoms will occur, whilst in others many will appear almost simultaneously.

"Dr. Hancock adduced a variety of arguments to prove the perfect identity of *Lepa Arabum* with the *Radesyge* of Norway, Sweden, and other northern countries. He had been led to investigate this part of the subject from having seen, with surprise, in the 18th volume of the *Edinburgh Medical and Surgical Journal*, a summary of symptoms drawn up from Holst, Stowe, and other writers, with the view to prove their *non-identity*. The objections contained therein were shewn to arise from a misapprehension of the subject, or from an over anxiety to establish certain preconceived opinions. Not only did the whole train of symptoms agree in every particular, but also the general progress of the two diseases, and the morbid changes which take place. Dissections of those who had died of leprosy had not afforded to the writer evidence of such changes in the genital organs, as have been adverted to by certain writers. It was worthy of remark, that the appearances noticed by different authors, in the *Radesyge* of northern Europe, are all occasionally observable in the *Cocobae* of the West Indian colonies, from which it is clear that varieties have been multiplied without reason, or for any practical purpose, but tending only to complicate and create confusion. Dr. H. had, in no instance, known the *Cocobae* (*Lepa Arabum*) to be communicated by the husband to the wife, nor *vice versâ*; so that, notwithstanding the prevalent opinion to the contrary, he had long ago regarded it as void of contagion; yet he was almost induced to think that, under predisposition and other concurring causes, the disease may, in the *ulcerative stage*, be communicated. It seems that *white* persons in the colonies avoid touching a person infected with leprosy; and they generally segregate the lepers on a distant part of the respective plantations.

"Having briefly stated the results of some post-mortem examinations in the disease, Dr. H. proceeded to detail the methods he had found most effective in its cure. When attended to early, the symptoms were easily arrested by the use of saline laxatives, with antimonials, anodynes, diaphoretics, vapour baths, and frictions; bleeding, spare diet, and the several means for promoting *lymphatic absorption*, and all the secretions, especially by perspiration. The advantage of such means, duly persisted in, was evinced in the relief obtained for the patient, and rendered obvious to others by the foul and fœtid miasms evolved, as well as by the *exuvie* thus thrown

off from the surface of the body. Cases which had occurred during Dr. H.'s practice in Guiana were adduced as illustrative of the advantages obtained over the disease by calling in the united aid of the various remedies.

"As auxiliaries, opium and the *Coonuparu* (the leaves of a plant of the Euphorbiacea family), were found to afford essential aids, along with the alternate use of warm vapour baths and cold affusions,—means which the author has found to be equally beneficial in divers chronic diseases. Moderate bleeding was often found to augment the strength, and greatly to facilitate the cure; along with the moderate use of tonics, diaphoretics, and iodine. The sensation of lassitude and debility often depends on hypertrophy or congestion. The morbid growths, or fungoid tubercles, in this disease, are nourished by excess of blood; they resemble those of cancer, and by many they have been considered equally incurable.

"The Indians of Guiana resort to fomentations, baths, and to a drink of the bark of a tree called *Mouca*, with the root of a vine, *Paramaroora*—a species of *Cissus*—and the bark of *Wuiazano* (guaiacum), the infusion of which is fermented with honey. They use also the bark of the tree '*Tamootu*,' a non-descript. These simple methods of the American natives are likewise of vast efficiency in arresting the most pernicious fevers, dysentery, and a multitude of ailments both acute and chronic."—*Ibid.*

37. *Kreosote in sea sickness.*—Mr. A. B. MADDOCK informs the editor of the *Lancet*, that he has given the kreosote as a preventive of sea-sickness, and found it prove almost uniformly successful. Dr. Elliottson has also used the article for the same purpose, and as far as his limited experience went, when he read his paper to the Medico-Chirurgical Society, with advantage. See this Journal, Vol. XVIII., p. 151. It will, indeed, be a valuable discovery, if kreosote shall prove an effectual remedy for the distressing sickness just named.

38. *Tetanus Neonatorum.*—So little has been done to elucidate the nature or treatment of this disease, that the following observations merit attention as being calculated to establish something positive in place of the vague notions which have hitherto prevailed on the subject. They are taken from a memoir by Dr. ROBERT FINCKN, published in *Hecker's Annalen*, (Vol. III., No. 3.) and are founded on the observation of twenty-five cases, which occurred at the Stuttgart Hospital, between the years 1828 and 1835, during which 848 infants were received into that establishment. Of the above twenty-five cases, thirteen were boys and twelve girls. Most of the cases occurred during the cold season.

Commencement of the Disease.—Tetanus neonatorum generally commences during the first week after birth. Thus, of the twenty-five cases only one began on the second day of the child's existence, while eight cases occurred on the fifth day, and seven on the seventh. The *prodromes* of this disease are so uncertain that we shall notice them but in a very brief manner. The child becomes uneasy; is seized with periodical fits of crying, which present a peculiar character; it takes the breast with avidity, but soon lets it go; the action of sucking is performed with difficulty, or is impossible; the intestinal canal is usually more or less deranged.

Symptoms.—As the disease becomes fully developed, the impossibility of sucking is quite marked; this is a very constant sign, and did not fail once in the twenty-five cases. The infant's face assumes a contracted and anxious appearance; the spasm of the muscles, at first insignificant, intermitting, and confined to the muscles of the jaw, becomes more intense, and extends to the muscles of the neck and back; and the spinal column is firmly fixed, or even bent backwards. In this state the child may lay, apparently tranquil, with the respiration a little accelerated, or it may be seized with violent and repeated convulsions. In this latter case the face becomes tumid, and almost black; the mouth is covered with foam; the arms and legs are bent up; the fingers and toes contracted. The spasmodic attacks occur every half or even quarter of an hour, and are brought on by apparently insignificant causes. After the lapse of twelve to twenty-four hours the infant falls into a state of general collapse, and soon dies in complete exhaustion. This latter period is very often marked by febrile symptoms, with burning heat of the back and head, while the extremities are icy-cold. The state of the umbilical cord is one of the circumstances which demands especial attention. In a great majority of cases a coincidence has existed between the separa-

tion of the cord and the development of the tetanus: thus the cord was separated fourteen times before the appearance of spasms, nine times during, and only twice after, their commencement.

Duration.—The duration of tetanus neonatorum is generally short. In fifteen cases the disease terminated within two days; one case was protracted to a week, two to five days; indeed it is almost incredible how long the tender constitution of the infant will sometimes resist this dreadful malady; thus, Dr. Elässer saw one single case which did not terminate before the thirty-first day.

Causes.—Dr. Finckh examines them at some length, but we shall only give an analysis of his remarks. It is impossible to refer the disease to any congenital malformation, or weakness of the infant, for all the children were born at the full period, well made, and many of them vigorous. The doctor is inclined to rank, as more immediate causes, the convulsibility of new-born children, and the suppuration or ulceration of the umbilical cord. Amongst occasional causes, the author enumerates atmospheric influence, cold, gastric irritations, mechanical stimuli, and injuries. With respect to the nature of the disease, he considers it to be essentially the same as the traumatic tetanus of adults, and to be produced by a congestive or inflammatory condition of the central nervous system. Tetanus neonatorum is generally considered to be more prevalent in warm climates than in any other; but the observations of Dr. Finckh tend, certainly, to show that any exposure to cold, especially during the cicatrization of the umbilical cord, is apt to determine tetanic symptoms. Thus, children baptised far from home, during a moist, cold season, are often attacked; and, in Germany, physicians have, for a long time, made this interesting remark, that cases of tetanus abound in such districts as are deprived of parish churches, while they are much rarer in towns and villages where the proximity of a church enables parents to have their children readily baptised.

Diagnosis and Prognosis.—The peculiar cry and expression of the face, the trismus, contraction of the limbs and back, and, above all, the coincidence of these symptoms with inflammation or suppuration of the umbilical cord, render the diagnosis of this disease extremely easy. Unfortunately, the prognosis is of a most unfavourable kind. Strong, vigorous children resist somewhat longer than weakly infants, but they all die. This is confirmed by the experience of all writers on this truly terrible disease.

Morbid Appearances.—We shall here repeat, at length, the results of twenty post-mortem observations made by the author. Most of the bodies were examined thirty-six hours after death; several from four to six hours after: and they were all enveloped in linen moistened with vinegar, and placed on the abdomen to prevent the gravitation of the blood.

(*External Appearances.*) The face retained its characteristic appearance of suffering; the muscular system, its rigidity; and the fingers and toes were powerfully contracted. The umbilicus was surrounded by a large circle of a green or bluish-green colour.

(*Spinal Marrow.*) The vertebral canal was opened in every case, and with extreme care. In four cases the spinal marrow and its membranes were free from any alteration. In the remaining sixteen an effusion of blood, in considerable quantity, occupied the whole length of the canal, between the bony walls and the dura mater. This blood was very dark in colour, sometimes fluid, at other times coagulated; in several cases it occupied more particularly a single region, as the cervical or dorsal, for example:—

In nine of the sixteen cases the dura mater and arachnoid were perfectly healthy. The pia mater was evidently inflamed and thickened in nine cases, and in three the portion lining the posterior surface of the spinal marrow, was deeply congested. The substance of the spinal marrow was firm and normal in the nine cases accompanied by inflammation of its membranes; in the seven remaining, an effusion of blood, or of a serous or gelatinous fluid, occupied the vertebral canal.

(*Cranium.*) In only one case were the contents of this cavity found exempt from alteration. In the other cases more or less extravasated blood existed at the surface, or in the interior of the brain. Thus, the effused blood was found:—

5 times on the surface of the brain.

5 — in the plexus.

- 3 times in the lateral ventricles.
- 2 — under the pericranium.
- 1 — at the surface of the cerebellum.
- 1 — below the tentorium cerebelli.
- 1 — above the tentorium. Here the forceps had been used.

The membranes of the brain were healthy, if we except more or less injection of their vessels. In one case an effusion of gelatinous fluid, instead of blood, was found between the arachnoid and pia mater. The substance of the brain, though commonly a little soft, offered nothing abnormal; in two cases, however, it was very hard, while the cerebellum was in a state of complete softening.

(*Thorax and Abdomen.*) The viscera contained in these cavities, presented nothing worthy of notice. The lungs and heart were commonly quite healthy. On opening the abdomen, the stomach and intestines were also found in a normal state; however, in five cases, some one portion of the intestinal tube was strongly contracted, while the rest was much distended with gas. The umbilical arteries and veins were carefully examined in eleven cases, without any trace of inflammation or other lesion being discovered. The various nerves and their plexus were also healthy.

Treatment.—This was exceedingly varied. In most cases the antiphlogistic method was tried, but all the children died, even when it was employed with vigour from the very outset. The symptoms were alleviated for a short time by lukewarm baths; but whenever blood was abstracted, even locally and in small quantity, they were evidently aggravated. About a dozen cases were treated, ineffectually, with musk, opium, and other antispasmodics. In one case, however, the use of these remedies seemed to protract the disease to the thirty-first day.—*Lancet*, August 12th, 1837.

39. *On the remedial powers of Turpentine in Nervous Irritation.*—Professor R. J. GRAVES asserts that turpentine exercises a very remarkable influence over many forms of nervous irritation. In many affections of the nervous system characterized by excitement, he says that he has employed turpentine with the most signal benefit. "Thus," he adds, "we frequently find it a most valuable agent in the treatment of chorea, of epilepsy, and of the convulsive fits of children. We have frequently experienced benefit from its use in the treatment of spasmodic affections of the stomach and bowels; in hysteria, tympanitis, and the subsultus of fever, we often derive from it the most rapid and effectual relief. You recollect a case of typhus which was lately under treatment in our wards, and of which one of the most prominent symptoms was general and continued subsultus; and you have all witnessed how much relief the patient obtained from small doses of oil of turpentine. Hence I was led to conclude that it might be employed with benefit in the latter stages of fever, where vascular excitement is greatly abated, and where the most prominent symptoms are irritation of the nervous centres, with more or less congestion of the gastro-intestinal mucous membrane."—*London Med. Gaz.*, June 17th, 1837.

SURGICAL PATHOLOGY AND OPERATIVE SURGERY.

49. *Toothache from Caries.*—TROSCHEL has followed up some observations made by him last year in a Prussian medical journal, in which he endeavoured to prove that the violent pain which occurs in caries of teeth is not caused by the laying bare of the nerve; and that caries, if unaccompanied by any other ailment, is in most cases free from pain. There are exceptions, however, to this rule which are not uncommon.

We find ordinarily two or more carious teeth together, of which very often one gives great pain, and the others, which are much more injured, and in an apparently worse condition, give no pain. Despite of all palliatives, and all possible attention in the avoidance of cold, the pain often lasts whole weeks, with increasing or decreasing violence; there is congestion and repeated swelling of the face, sleep and appetite are banished, and even the good constitution of the sufferer

begins to be affected. After the tooth, the author of all this suffering, has been drawn, all complaints cease, and the patient soon recovers.

If the extracted tooth be now broken in two, or, what is better, sawed longitudinally through the centre, we find that from the carious part, which is often very distant from the nucleus, there extends a black or brown streak into the cavity of the tooth where the nerve lies. Sometimes this streak is not very distinctly marked, and in this part the substance of the tooth is only a little less white, duller, and more pellucid than the surrounding structure. This change of colour occurs on this account, because that the canals in the substance of the tooth, which lie in layers close one behind another, and pass from the circumference to the centre, are permeated with pus (according to the examinations of Purkinje, Valentin, Gurlt, and Müller;) they are denominated by the last mentioned author, "caniculi chalicophori." In caries of the crown of the tooth, the phosphate of lime which is contained in these canals is absorbed, and during the suppuration the carious matter infiltrates still farther from the base of the abscess into these little pores: then not only the white colour is lost, but the nucleus of the tooth (the nerve of) becomes affected, and this causes the most intolerable pain.

Every dentist of observation has seen those dark streaks which pass to the nerve; the little canals can, however, only be seen under the microscope, and then only on thin sections of the tooth prepared on a grinding stone.

It is only from very acrid applications, and such as for a period paralyze the nerve, that any alleviation is to be obtained from the torture one suffers, and which arises in the manner we have described. Even the application of the actual cautery to the carious hollow has no lasting effects, and the extraction of the tooth remains as the only resource.—*Dublin Medical Journal*, 1837.

41. *Ligature of the external iliac artery.*—This operation was successfully performed by M. LISFRANC, in May, 1836, for the cure of an aneurism situated about half an inch from the crural arch. A single flat ligature, formed of four threads united, was applied; and the limb afterwards enveloped in warm cloths, frequently renewed, which M. L. prefers to bags of warm sand; the latter impeding the capillary circulation by their weight, and acting as rubefacients when the sand is over heated.—*Bull. Gén. de Thérapeut.*, Aug. 15, 1836.

42. *Treatment of abrasions.*—In cases of loss of cuticle from external violence, Sir ASTLEY COOPER has found an application of liquor plumb. subacet. with two grains of sulphate of zinc to the ounce, produce new skin in the course of eight hours. He finds it, he says, the best application.—*Lancet*, Oct. 11, 1837.

43. *Ligature of the Primitive Carotid.*—This operation has been successfully performed by Dr. BEDOU, of Troyes, for the cure of traumatic hemorrhage, in a man twenty years of age, resulting from a wound in front of the right axilla. The man was discharged cured on the 45th day.—*La Presse Médicale*, Feb. 4, 1837.

44. *Ligature of the Arteria Innominata for Aneurism of the Subclavian.*—In our last number we announced the performance of this operation by Mr. LIZARS. The following are the details of the case as reported in the *Lancet* of the 15th of July last.

Alexander Duncan, aged 36, a carter, admitted May 28, 1837. Fifteen months ago he met with a fall, and again another fall, on the elbow, eleven months since, which led, six weeks ago, to the appearance of a small pulsating tumour, above the clavicle, indicating aneurism of the subclavian artery, for which Mr. Lizars determined on tying the arteria innominata. The operator having arrived at the innominata, an aneurism needle was carried round it, from the right side, upwards, towards the trachea; the ligature was seized, and the artery tied. The hemorrhage during the proceeding amounted to about two ounces.

The patient was examined two hours after the operation, and did not present any unfavourable symptoms, excepting some pain in the course of the carotid and brachial arteries, and at about the elbow-joint, which, towards evening, were attended by pain, on inspiration, in the right side of the chest. The pulse was full, and varied from 74 to 78. The pulsation in the tumour was completely suspended by the ligature of the innominata.

June 1st. On the day after the operation the patient felt somewhat easy. The head is free, and a sense of suffocation, which has tormented him during the night, has gone off. He slept in the morning for a couple of hours, and passed the rest of the day without accident. The wound looked well.

3d. The pulsation returned in the tumour, and a small quantity of blood distilled from the wound. The face seemed flushed, and the patient complained of the heat of the weather.

4th. The pulsation in the tumour (which feels quite hard) has disappeared. He has passed three copious evacuations, and is free from uneasiness. Pulse 110, soft.

6th. Patient progressing favourably. No accident has occurred.

June 8th, nine days from the operation. Passed a good night, and feels quite easy; bowels regular; tongue moist, and almost clean; pulse 96, and soft; skin cool and moist; passed about two pounds of urine last night, and the same quantity was drawn off this morning.

9th. Slept well all night, and has no particular complaint. The wound looks well, and has nearly healed; it is discharging thick, healthy pus. Tongue still furred, but moist; pulse 96; skin cool; appetite good. Took a little chicken soup with relish. Does not complain of thirst.

10th. Slept well, and feels quite easy this morning. Still requires to have his urine drawn off in the morning. Pulse 92, soft; tongue very nearly clean; skin cool, appetite good.

11th. Passed a good night, and is in all respects the same as yesterday. Two pounds and a half of urine drawn off.

12th. Did not sleep so well as usual; perspiring a great deal. Complains of slight nausea. Tongue furred; pulse 100. Has had two stools since yesterday.

13th. Passed rather a restless night. Complains much of thirst. Pulse 100; tongue furred, and rather dry; skin cool and moist; bowels regular; still complains of nausea; three pounds of urine were drawn off. Habeat q. pr. *calomel*, three grains.

Vespère.—The calomel has operated three times. Vomited a good deal of bilious-looking stuff. Nausea gone; pulse 110. Feels more comfortable than he did in the morning.

14th. Passed a good night, and has no particular complaint. Tongue much cleaner; skin cool and moist; very little thirst; bowels regular; appetite good. Passed two pounds of urine.

15th. Passed a good night. Feels better than he has done for the last two days. Pulse 96, and soft; tongue almost clean. Takes beef-tea with relish; has had some weak bitter table-beer. The wound has healed, with the exception of a small sinus, which is discharging healthy pus in a moderate quantity, and which, it is presumptive, communicates with the ligature. Bowels regular; skin cool and moist.

16th. Urine still requires to be drawn off every morning. Three pounds of urine were drawn off to day. In all respects the same as yesterday.

Vespère, 7, P. M. On dressing the wound the knot of the ligature was found amongst the pus. (At the operation both ends of the ligature were cut away.)

June 17th, 11, A. M. Passed rather a restless night, and at present complains of slight pain in the right side, and difficulty of breathing, which is much increased on taking a full inspiration; face flushed; pulse 120, full; skin hot and dry; tongue slightly loaded and dry; countenance anxious; great thirst; during the morning has been troubled with nausea and diarrhœa; urine passed naturally this morning. Apply fifteen leeches to the painful part. Three grains of *calomel*, one grain *tartr. of antimony* in an ounce of water. A table-spoonful every hour.

1, P. M. Leeches bled freely, with considerable relief; sinapism to the side.

4, P. M. Pain of side and difficulty of breathing gone; feels much easier in every respect; diarrhœa nearly ceased.

10, P. M. Feels quite easy at present; pulse 120, but soft; diarrhœa gone; skin cooler, and more moist; countenance not so anxious; still complains of thirst.

June 18th, 11, A. M. Passed a quiet night, and slept well; feels quite easy about the chest and side; face less flushed; pulse 116, soft; skin moist; a good deal of thirst and nausea; diarrhœa returned; urine naturally evacuated. Toast and tea for breakfast, with relish. *Efferv. powder* every hour.

6, P. M. Diarrhœa still troublesome; nausea subsided; pulse 112, soft; skin cool and moist. *Anodyne lozement* with fifty drops of *laudanum*. Omit the *tart. of antimony*.

9, P. M. No motion since last report; feels quite easy; skin dry; pulse 116. *Powder of ipecac.* with *opium*, twelve grains; *Extract of opium*, one grain.

June 19th. 7, A. M. Has slept well all night; no return of diarrhœa; awoke this morning at seven with a severe fit of dry coughing, which caused hemorrhage to take place from the wound. It was easily commanded with the finger, until a narrow strip of lint was stuffed into the wound, and a compress placed above it. About eight ounces of blood were lost. Pulse 110, fluttering; countenance anxious; skin dry.

12 o'clock. No return of hemorrhage; tongue furred; pulse 120, strong and irregular. Blood-letting to twenty ounces at once.

R. *Extract of belladonna* one-sixth of a grain; *aromatic powder*, q. s.; one pill every two hours.

4, P. M. No more hemorrhage; pulse reduced in strength but not in quickness; blood drawn, much cupped and buffed; countenance still anxious; bowels once opened; cough harassing.

R. *Extract of belladonna*, one-third of a grain; *aromatic powder*, q. s.; a pill every two hours.

R. *Tincture of digitalis*, ten drops; *tincture of hyoscyamus*, twenty drops; to be taken in a cup of water every second hour.

10, P. M. Slight oozing of blood, which was easily stopped by a little pressure for a few minutes; skin hot and dry.

Dover's powder, ten grains; *opium*, one grain. To be taken at once.

June 20th. Noon. Passed a restless night; no return of hemorrhage; passed urine voluntarily; bowels open. Took tea and toast for breakfast. Pulse 120, soft. Continue the medicines. Belladonna plaster to the sternum.

6, P. M. Hemorrhage commenced at 5 o'clock, P. M., which was easily commanded by pressure upon the wound, and entirely stopped by the introduction of lint. The quantity of blood lost did not exceed four ounces. Pulse 96, soft; skin cool, but dry. *Dover's powder*, twelve grains; *opium*, gr. jss. at once.

June 21st. 2, A. M. Has taken some tea and toast; slept from 10, P. M., until half past 12; feels perfectly easy; skin cool and moist; pulse 106, soft; hemorrhage again took place at a quarter past 1, A. M.; the external bleeding ceased on inserting an additional piece of lint. The quantity of blood lost at this time would be between two and three ounces, but it was evident that there was *internal hemorrhage*, from the tumefaction of the neck, and occasional spitting of mouthfuls of blood, accompanied with frequent cough, and considerable dyspnœa. The dyspnœa gradually increased until half past 1, A. M., when death closed the scene, on the twenty-first day after the operation.

Inspectio cadaveris.—This had to be done privately and hurriedly, which must account for the brevity of the description. The wound of the neck was extended in every direction, and the thoracic cavity opened, when there appeared about twenty ounces of coagulated blood at the root of the neck and upper part of the right bag of the pleura, the apex of the right lung being pressed down in its cavity by the blood, for there were on this side adhesions throughout the pleura-pulmonalis with the pleura-costalis, of recent formation. The lungs of this side were apoplectic and softened. There were old adhesions on the left side, but the lungs were healthy.

The heart and arteries were healthy, with the exception of the tied point of the *arteria innominata*, and the aneurismal tumour of the right subclavian. The point of deligation of the *arteria anonyma* was separated a little in consequence of the bleeding, and there was some coagulated blood extending a very short way into the aortic portion of the *innominata*, and upwards into the right carotid, but none into the commencement of the subclavian. The vertebral artery, the thyroid, the internal mammary, and the transverse cervical were all pervious without any coagula. The aneurismal tumour was collapsed, and full of coagula, as also was the subclavian beyond it.

In concluding the history of this case we may add, that Professor Lizars is now inclined to believe, that a plan of operation more likely to succeed in a similar case would be first to tie the subclavian just at its origin from the *innominata*,

and then to tie the carotid about an inch above its origin, with the view of allowing the formation of an internal coagulum.

45. *Aneurism of slight Subclavian Artery, Ligature internal to the Scalenus Muscle.*—This operation was performed by Mr. G. F. HAYDEN, Esq., of Dublin. The subject of the case was a woman 57 years of age, of intemperate habits, admitted into the Anglesey hospital, September 7th, 1835. "On examination a large pulsating tumour was observed situated internally to the axilla, parallel to the upper edge of the pectoralis minor, and extending above the clavicle: it is circumscribed, and has pulsation referable to its inferior part. There is considerable tension on the upper portion of the tumour, the size of which can be diminished by pressure. Comparing the clavicle of this side with the opposite one, the former appears somewhat displaced, being pushed upwards. The arm, forearm, and hand were much swollen and oedematous some days since. "Bruit de soufflet" over tumour.

"Results of stethoscopic examination not unfavourable in reference to operation for this disease, declared to be aneurism of subclavian artery extending to the *scalenus*. She now describes the pain as darting through the tumour to the back of the shoulder, and down to the elbow. She also complains of an almost insupportable sense of weight and numbness in the whole extremity, although the swelling of it is inconsiderable.

"From the 7th to the 15th of September, aperients, venesection, and anodynes were employed with only temporary alleviation of her sufferings.

"Consultations were held, at which some of the most eminent practitioners of this city gave their assistance. The operation at the distal side of the artery was mooted; but, ultimately, it was decided, that the subclavian should be tied at the internal side of the *scalenus*, if that portion of the artery proved sound, and if not, to secure the *arteria innominata*. The sufferings from the aneurism were, at this time, very severe; anodynes in immense doses had failed to procure even temporary ease.

The operation was performed September 15, 1835, at 3 o'clock, P. M., in the following manner:—"Patient placed on the back upon a large table, furnished with mattress and bolsters; head slightly depressed, and turned to the left side. First incision, commenced nearly at the left sterno-clavicular articulation, traversed the upper margin of sternum and clavicle, terminated beyond the posterior or acromial margin of the sterno-mastoid muscle, through integuments and platysma, including subjacent adipose tissue, of about a quarter of an inch in depth. Second incision commenced about four inches from the sternum, a little to the left of the mesial line of the neck, so as to terminate by falling at right angles on the commencement of the first incision, dividing the parts to the same depth: two sides of a triangle were thus formed, the apex at the sternum. The flap, consisting of integument, platysma, and adipose layer, was raised from apex upwards and outwards; the outline of the sterno-cleido-mastoid was now very distinct, but still covered by the superficial cervical fascia; the latter was carefully divided immediately above the sternum, corresponding to the anterior edge and lower extremity of the sternal portion of the sterno-cleido-mastoid. A director was next introduced beneath this muscle, the fibres of which were divided at about a quarter of an inch from the sternum and clavicle, and precisely parallel to its origin. The muscle was now raised upwards and outwards with the handle of a scalpel; a small vein was here tied. In the next stage of the operation, the sterno-hyoid and sterno-thyroid were divided upon a director. Hemorrhage from a small artery and vein so inundated the part, that it was found necessary to secure them before the operation was proceeded with. After the displacement of some cellular structure with a director, the innominata, carotid, and subclavian were felt; compression of the last mentioned vessel suspended pulsation at the wrist and tumour. The first part of the subclavian was found not involved in the disease, and, consequently, it was decided that this vessel should be tied in preference to the innominata, which had been clearly exposed, and which, from its direction, and being uninterfered with by the clavicle, seemed to offer much less obstacle to the passage of the ligature; this was, at first, attempted with an aneurism needle, made of silver, in order that it might be bent so as to present a degree of concavity to the clavicle, to be determined by the displacement of this

bone, and the depth of the artery. The eyed part of the needle, for about an inch, was made to slide off and on (like the canula of a trocar,) so that when the extremity of the needle was brought around the artery, the eyed portion, with the ligature, might be withdrawn. But when the handle of the instrument was depressed, the upper part slipped from the lower before the latter had passed under the artery. The vessel was subsequently secured with Mr. L'Estrange's* needle.

"This needle, when operating upon the subject, was found to unscrew in attempting to pass it under the artery. Mr. L'Estrange, with that ingenuity for which he is so remarkable, has obviated this objection by adapting a silver canula, which, on being pushed down, prevents the extremity from being unscrewed, and on being drawn up, admits of the separation of the eyed portion from the shaft. The surgeon's knot was made very readily in the usual manner; the middle and internal coats of the artery were felt giving way as the ligature was tightened, the extremities of which, having been brought over the clavicle, the flap was next laid down and retained by two points of suture, pledgets of lint, and adhesive plaster.

"Eight o'clock, p. m.—Immediately after the operation, the pulse in the left wrist was 124, and soft; respiration somewhat oppressed, and became more so since, accompanied with partial loss of voice; difficulty of deglutition; felt an acute pain in the stomach after swallowing any fluid; considerable sense of tension in the neighbourhood of the wound:—tumour, which was considerably diminished, upon the application of the ligature, is now refilled, but, with an absence of pulsation; complains of pain somewhat similar to that experienced before the operation; coldness of the right hand, which was removed by the application of warm flannels."

Two days after the operation the patient was attacked with bronchitis, which was subdued by appropriate treatment; but the patient could not be prevented from frequently moving the affected extremity, and on the tenth day, although positively forbidden, she got out of bed, and walked about the room. Subsequently at 2 o'clock, p. m., she would not suffer the nurse to pass the bed-pan under her, but got out of bed; while in the act of doing so, and rising upon her right hand, placed upon the bed, considerable hemorrhage suddenly occurred. A sponge thrust into the wound arrested the bleeding, but not until nearly a pint of blood had been lost. The hemorrhage did not recur, but the patient gradually sunk, and expired on the twelfth day, retaining her consciousness to the last.

Post-mortem.—"On raising the parts concealing the loop of the ligature some coagulated blood was found in this situation. The surrounding parts were all agglutinated by the effusion of lymph. The subclavian artery, at the site of the ligature, was gaping irregularly for three-fourths of its calibre, the remaining one-fourth sound and retaining the ligature. The right carotid *considerably* enlarged. The aneurism was found to extend to the anterior scalenus muscle, beneath the clavicle, and between the branches of the brachial plexus of nerves.

"Its contents were solid throughout, and laminated. A second aneurism, of the axillary artery, about the size of a large gooseberry, distinct from the former, was situated in the first stage of its course. The innominate was healthy; the arch of the aorta somewhat dilated; heart natural; acute bronchitis of both lungs."

"It is a curious fact," Mr. Hayden remarks, "that so many years (24) should have intervened between the taking up of the subclavian artery internally to the scalenus muscle, an operation first performed by Dr. Colles, Ex-professor of Surgery of the College of Surgeons in Dublin, in October, 1811,† and the preceding case, the particulars of which I have just detailed; the more so, as the artery was subsequently tied, seven months after, in this city, by Mr. O'Reilly, in *Jervis street Infirmary*, and although the patient was young, in rude health, an exceedingly favourable subject, yet he was carried off by secondary hemorrhage supervening on the thirteenth day after the operation. In this case, the ligature had

* This instrument is made of steel; has two eyes close to each other; the one farther from the point carries the ligature; the other receives a small steel hook that fixes the extremity of the needle while the shaft is unscrewed from that portion containing the eyes, which then may be readily drawn around the artery together with the ligature.

† See "Ed. Med. and Surg. Jour." Jan., 1835.

come away; the artery was found fairly divided, and both portions, distal and cardiac, separated two inches, and also patulous, the *cardiac extremity particularly so*. In none of these cases was there such an attempt at the reparative process in the site of the ligature, as to render us sanguine of the result in pursuing this plan of treatment again. In Mr. O'Reilly's case and my own, the disease of the axillary artery would contraindicate the performance of the operation on the distal side of the aneurism. Operations performed upon the subclavian in the outer third have proved successful, although very near the site of the operation internal to the scalenus. Are we to look for the cause of this success in the circumstance of the *impetus of the blood sent from the heart* being taken off by the several branches (viz: vertebral, thyroid-axis, internal mammary, cervicalis profunda, superior intercostal,) which come off from the artery at the cardiac side of the ligature?

"The want of success that has followed a ligature placed upon the A. innominata, would also go to shew that the impetus of the blood has a great share in disturbing the sanative process set up by nature at the site of the ligature. Under these circumstances, I would suggest the propriety of tying both the common carotid and the subclavian at the *same time*; and the steps of the operation necessary for exposing the latter, will be sufficient for laying bare the former also. A coagulum will soon form, which will extend through the portions of subclavian and carotid on the cardiac side of the ligature, and also through the *whole* of the arteria innominata. The carotid, not having any branch near to the distal side of the ligature, would be more secure than the subclavian; but we have seen that coagulation of the blood in the aneurismal tumours was *not* presented by the reflected supply obtained from the branches intermediate between the ligature and the aneurism; and in three cases, the common carotid of that side was open and *considerably* enlarged. Of course, this plan should be aided by the constitutional and local means known to favour coagulation of the blood in the sac of an aneurism. How favourable has been the termination of operations upon the carotid femoral, and external iliac arteries. In each of these cases, the large vessel (subclavian, profunda, or internal iliac respectively) is at such a distance from the ligature as to permit the formation of a *lengthy* coagulum at the *cardiac* side of the ligature. Were I to operate again upon such a case, I would bind the patient's arm so effectually as to prevent, as much as possible, the motion of the affected extremity. The perverseness and obstinacy of my patient, in this respect, were most deplorable, for she would, in despite of all our entreaties and warnings, move about, perfectly reckless of consequences. The disturbance thus produced must have contributed to prevent the reparative process being fairly established. Such patients should, in my opinion, be placed upon Earl's bed, and rest, as absolute as possible of the whole body, enjoined.

"In those cases, the severe and almost intolerable pain endured by the patients (probably owing to the pressure exercised by the aneurism on the brachial plexus of nerves,) renders them anxious to submit to any operation, and, indeed, warrants the surgeon in undertaking what may be esteemed to afford but even a *possible* chance of success. In Moulang's case, the most powerful narcotics had failed to procure even temporary ease. This poor woman frequently declared she would prefer death to lingering out a miserable and painful existence, rendered, each day, more distressing by the aggravation of her sufferings consequent upon the progress of the disease."

46. *Fatal operation for Cleft Palate*.—A daughter of Lord Lyndhurst, who was taken to Paris for the express purpose, was operated upon last year by M. Roux, for cleft palate. The result is said to have been fatal. We do not find in any of our journals the details of the case.

47. *Styptic powers of the Aqua Scæle cornuti and Binelli*.—In November, 1832, Dr. MÜLLER divided the popliteal artery in two sheep, and then applied a piece of lint to each, moistened, in one case, with the *aq. binelli*, in the other with the *aqua scæle corn.* The hemorrhage was arrested in both cases, after the lapse of about six minutes: a similar result was obtained, after the same arteries were exposed a little higher up, and again divided. The caudal artery of a horse was cut through, and, while bleeding very freely, was submitted to the action of the

above-mentioned substances; the hemorrhage ceased in a few minutes. The anterior crural artery of the same horse, being also divided near its exit from the chest, the bleeding was arrested in eighteen minutes, with lint moistened in the aq. sec. corn.—*Lancet*, from *Klein. Repert.*, Dec. 1836.

OPHTHALMOLOGY.

48. *Ossification of the hyaloid membrane and vitreous humour.*—Dr. GRILLO, Prof. of Anatomy in the University of Naples, exhibited at the meeting of the Medico-Chirurgical Academy of Naples, on the 11th of March last, two eyes, the vitreous humours of both of which were completely ossified. The individual from whom these eyes had been taken was an old sailor, who had been for twenty-five years tormented with gout in his feet. The disease became displaced, and the eyes were affected with obstinate inflammation, followed by opacity of the cornea, atrophy of the eye-balls, complete blindness, and the gradual conversion of the eyes into two white hard balls. Finally the patient died of apoplexy. The ossification of the vitreous humour is exceedingly rare, this degeneration being usually confined to the hyaloid membrane. Dr. G. met with this last named pathological condition in the eye of a subject dead from phthisis. Several cases of ossification of the hyaloid membrane are recorded by Wardrop.—*Osservatore Medico di Napoli*.

49. *Treatment of Cataract without an operation.*—During the years 1834 and 5, twelve patients, with confirmed cataract, were treated at the Hotel Dieu, by revulsives, external and internal, and the other medicines recommended for the cure of cataract. This treatment was persevered in for four, five, six and eight months, and in two cases for eleven months, without any benefit. Dr. CAFFÉ, however, states, that physiology as well as some cases of disease which he has witnessed, leads him to believe in the possibility of sometimes arresting the progress of forming cataract, and even causing them to retrograde, in persons in early life, and in good health.—*La Presse Médicale*, May 27, 1837.

MIDWIFERY.

50. *On spontaneous evolution of the Fetus during Labour.* By M. VELPEAU.—The value and the mechanism of spontaneous evolutions are, it seems to me, sufficiently unknown to make the observations which have been addressed to me since the publication of the second edition of my *Traité d'Accouchement*, interesting to your readers. It is a proof that this phenomenon is less rare than is generally conceived, that to the three cases here transmitted to you, two more may be added, which M. Bleyne has communicated to the *Gazette Médicale*. First, let me state, in a few words, what must be understood by *Spontaneous Evolution of the Fetus*. We may admit, I think, two kinds of it; one comprehending all the cases in which the fetus really changes its position, which deserve the name of spontaneous version rather than that of evolution; the other relating to the cases in which a part at first far removed becomes engaged in the pelvic strait, without displacing that which was there before.

In the first species of evolution, almost the only one of which there is a clear notion in France, the fetus completely changes its place. Sometimes it is the head which rises, while the buttocks descend; sometimes, on the contrary, the buttocks leave the neighbourhood of the strait, and the head becomes engaged in it. Two varieties may consequently be established under this species, one for the head, the other for the pelvis; and we might describe separately the spontaneous cephalic version, and then the pelvic, if their details had been better studied. One of M. Bleyne's observations belong to the first of these varieties.

In this case the spontaneous version of the fetus is easily explained. The head of the fetus being the most solid and voluminous, and most regularly rounded part, and consequently the most easily sliding, naturally tends towards one of the two ends of the great diameter of the uterus, and usually towards the cavity

of the pelvis. If, under the influence of any cause, it has taken another position, it is very simple, that, pressed by the organ containing it, it should gradually and without much difficulty regain the place which it occupies in the normal condition of parts. When the uterus contracts, if the fetal ovoid be well situated, it is compressed equally every where; but if, on the contrary, it deviates from the best position, its extremities bear almost the whole effort of the contractions, and unless the shoulder, which on its part projects sufficiently to be stopped at the strait, be forced into it, the head or the pelvis almost always will be.

In evolution, properly so called, two very distinct varieties are also found; one for the head, the other for the pelvis.

In the first, the head, at first far distant from the pelvic rim, descends at last into it, without the part previously engaged in it rising or being sensibly displaced. The cases published are sufficiently authentic to authorize me to admit this as a distinct variety. After having seen the shoulder or the top of the sternum filling the hollow of the pelvis, and arriving even at the vulva, practitioners have been able to convince themselves that traction exercised on the fœtus, or the violent efforts of the woman, were capable of causing the advance of the head, and that then this part gradually gets clear of the pelvis, descending from neck to vertex, without the chest quitting the hollow of the pelvis.

The second variety of spontaneous evolution, which is the most frequent and remarkable of all, is that where the shoulder, fixed in the excavation, or even at the vulva, does not prevent the fœtus from passing out by the pelvis. It is this variety which has of late occupied special attention, having been confounded with spontaneous version.

The attentive observation of what passes in such cases, and experiments on the dead body, prove that—1st, the shoulder begins by descending to the vulva, till the side of the neck and the upper surface of the clavicle or acromion take a fixed point of support on one of the sides of the inferior strait; 2nd, the nucha, or the anterior part of the neck, with the top of the chest, may do the same when the arms have passed out either before or behind; 3d, the contractions of the uterus, and of the muscles, then acting on the pelvis, which is the most elevated, and the only moveable part, without permitting the head to rise, force the chest to bend, and becoming flattened, to descend, and present itself at the inferior aperture, and then at the vulva; 4th, the fœtus, once doubled, the abdomen, pushed on in the same manner, arrives in the hollow, and then at the vulva, while the thorax continues to unbend and straighten itself externally; 5th, the buttocks following the movement, in their turn become engaged in the pelvic cavity, resting on one of the ischiatic notches, and passing from above downwards, by a kind of rocking motion, into the inferior strait and to the vulva, after having distended and violently compressed the edge or side of the perineum opposite to that which serves or has served as the fixed point to the shoulder or neck.

To comprehend this mechanism, it is sufficient to imagine an elastic and flexible rod or spring, one of whose extremities is fixed on one of the sides of the hollow or straits of the pelvis, while the other extremity is forcibly acted on. Thus fixed and rendered immoveable at one end, this rod will bend under the power supported by the other, and will present its convex portion at the vulva, till it can unbend there entirely. The trunk of the fœtus and the flexible spine just resemble such a rod. The head and shoulder form the fixed extremity, and the pelvis, and then one of the haunches, the extremity which has to support the power, while the intermediate portions unbend and disengage themselves at the vulva.

CASE I. (communicated by M. Capuron).—"In April, 1837, Professor Velpeau was called in the night to the village of Bievre, near Paris, to terminate an accouchement. He begged me to go for him, being unable to absent himself from his duties at La Charité, and I left Paris at two in the morning, and was three hours on the road. On my arrival I found that the woman had been delivered an hour since. The *sage femme* and two physicians, who had passed the night with her, told me that the labour lasted two days; that after the rupture of the membranes, which had occurred in the evening, the arm of the child had passed out of the vulva; that they had not dared to return this limb into the uterus, nor turn the child, and that at nine at night an accoucheur had been called from Paris. They added, that towards five in the morning the woman had

uttered some cries and made some efforts, and that on going to her, they found the child entirely out of the vulva, except the head, which was still retained between the labia, which offered, however, no resistance. The labour had therefore been terminated of itself, or by *spontaneous evolution*, to use the expression of Denman. The placenta followed immediately after. The woman was in bed, and did not appear distressed. I was shewn the child, which was of more than the usual length and size. The arm, the top of the shoulder, the scapula, clavicle, and corresponding side of the neck and chest, were red, blackish, and deprived of epidermis. I know not what were the consequences of the labour to the mother."

CASE II. (communicated by M. Capuron.)—"In 1835, a distinguished accoucheur in Paris boasted at a sitting of the Academy, that he had never met with an insurmountable obstacle to delivery, when the arm of the child had passed out prematurely. A short time after, an occasion presented itself of judging what foundation there was for such a declaration.

I was sent for to the Place Maubert, to a strong and vigorous woman, who had been two days in labour. I found there a *sage femme* and three accoucheurs. It was six in the morning: the right arm of the child was at the vulva, swollen, but not redder than natural. The *sage femme* confessed that she had made some traction on the limb, and two of the accoucheurs told me that they had endeavoured by turns, but in vain, to turn the child, so as to extract it by the feet. On touching the woman I found that the vulva and vagina were swollen, dry, and of rather an elevated temperature; that the external orifice of the uterus, soft, and surrounding the protruded arm, offered but little resistance, but that the internal orifice was strongly contracted, as was also the whole body of the uterus, where hard walls could be felt in the hypogastrium. The pains had ceased. After having examined the state of the uterus and the situation of the child, I called in the advice and assistance of the accoucheur above-mentioned, and he soon arrived. Immediately on his arrival he set about to terminate the labour, and made great efforts to seize the feet, but was unable to effect his object. He made four successive attempts, but all in vain; the resistance of the uterus was insurmountable, and he had sat down to take breath again, when suddenly a gurgling was heard in the abdomen of the woman, followed by the fall of the child and of the membranes on the floor. The uterus had been so weakened, that it had no longer the power of retaining the products of conception, or of counterbalancing their weight. Some seconds later, the hand of the accoucheur, placed only at the entry of the vulva, might have received the child and its appendages, and he would have had the appearance of having terminated the labour, which was completed spontaneously. The child was in this case dead, and the mother expired a short time after."

CASE III. (communicated by M. Capuron.)—"In 1815 I was called to a woman in child-bed, near the Sorbonne, where I found two accoucheurs and a *sage femme*. The child presented the right arm, which was gangrenous, livid, and partly stripped of its epidermis; the top of the shoulder, the scapula, and clavicle, protruded from the vulva, and presented the same colour as the arm. The mother was weakened almost to death, both from the long labour, and on account of the manipulations to which she had been subjected, to relieve her.

After having given the most unfavourable prognosis on the condition of both the mother and the child, I placed the former in a convenient situation, and endeavoured to terminate the labour. I expected to find numerous difficulties; but what was my surprise when I felt that the shoulder and arm of the child, which were outside the vulva, re-entered the pelvis, and passed up into the uterus, without any resistance. I then seized the feet and turned the child, which was dead, and beginning to be decomposed. One hour after the mother was no more."

I may add, says M. Velpeau, to what M. Capuron has here said, that some contractions of the uterus might easily have effected what the hand of the accoucheur did here, and transformed this turning into a true evolution.

CASE IV.—This observation was addressed to me in October, 1835, by M. Giraudet, a very distinguished physician at Cusset:—

"I formerly followed your course with much zeal and assiduity; but I have been witness of a fact which I think escaped your knowledge. A professional brother, tired of being unable to terminate a labour in which the arm had presented, sent

for me. I went, and found that he had left, not wishing, as he said, to be witness of the death of the mother and the child. I endeavoured to turn; it was impossible, or at least after many trials I failed. A little *sage femme* came, with a small and delicate hand, but she had the same difficulties. Both fatigued, we left the patient, almost dying, to take some nourishment. Half an hour after, we returned; she had been delivered alone of a fine boy, who was dead.²

It is true that this kind of evolution is almost always accompanied by the death of the fœtus, and that the cadaveric softness and the flexibility which follow the cessation of life in all the organs, favour it considerably; but we should be wrong in considering that the death of the child is always the prelude, and not the effect, of the occurrence. The sanguineous tumour, pointed out by some authors, on the part which becomes first engaged, demonstrates clearly, in fact, that the children of whom they speak have still lived a long time after the descent of the chest into the strait.

Perhaps these facts may induce some changes in the practice in accouchements, when there is a presentation of the arm. In fact, when turning presents extreme difficulties, I think that it would be better to take care of the mother at the expense of the fœtus, than of the fœtus at the expense of the mother. On this subject I will put the following alternative: either it is actually impossible to overcome the constriction of the different points of the uterus, (and in this case it is not conceivable that the child should be still living, or can be brought away alive,) or the life of the fœtus is maintained, and here a successful turning may be possible without mutilation. In the first case, is the amputation of the arm to be had recourse to? I think not. The fœtus, being dead, should be extracted with as little risk as possible to the woman. I should wish in consequence, after such a decision, that turning should be given up to try evolution. Traction on the arm, after the manner of Fabricius de Hildanus, or Fichet de Flechy, a band passed over the trunk, as Peu advises, blunt hooks applied on the top of the chest, or the fingers themselves, should be successively tried to effect the descent of the abdomen and buttocks, or even of the head, if it shewed the least tendency to move on.—*La Presse Médicale*.

51. *Extra-uterine pregnancy occurring twice in the same woman, and each time terminating favourably and in the same manner.*—The examples of extra-uterine gestation on record, are very numerous, but we do not remember one exactly similar to the following, communicated by Dr. GALLIAT, to the *Journ. des Connaiss. Méd. Chirurg.*, and published in the number of that journal for June, 1837.

The subject of this case was a young woman, in perfect health, of middle size, and very good constitution, who shortly after her marriage to a schoolmaster, had a quarrel with another female, who threw her violently on the ground, and ill-treated her in the most brutal manner. The moral and physical suffering of the patient gave rise to an illness of several days, which, however, subsided without any grave accident.

The abdomen now gradually enlarged, and the young woman thought herself pregnant; the pregnancy seemed to run its course in the usual manner; and after the lapse of nine months several of the phenomena of labour set in, but without any result; the pains soon disappeared, but the abdomen remained developed.

Several months elapsed without any change, and the patient, as well as her friends, commenced to doubt of the reality of the pregnancy. At this period the husband was removed to another parish, and the author of the case lost sight of his patient. After some time the woman was suddenly seized with violent pains in the abdomen, of a peculiar kind. A physician was sent for, but ignorant of the cause of the disease, he ordered some general remedies, such as the warm bath, &c., which produced a momentary calm. The pains, however, soon returned, at shorter intervals, and with greater violence at each access. Several medical men were called in, in succession, without any benefit to the patient, and without discovering the real cause of her sufferings. The latter at length became so insupportable, that a consultation of seven medical men (the author included,) was held. The abdomen was now as large as that of a woman in her ninth month: it was tense, and so resisting in every point, that it was impossible to offer any conjecture on what the cause of the tumefaction might be. The whole surface of the abdomen was painful to the touch, particularly about the

groins. The sexual organs, examined by the touch, presented nothing abnormal. The pulse was hard, face highly coloured, and the pains excessively acute.

In this state of things, a general antiphlogistic treatment was resolved upon, leaving to nature to clear up the diagnosis. One of the physicians present spoke, it is true, of an extra-uterine pregnancy, but the state of the abdomen rendered it impossible to pronounce in any thing like a positive manner. The consultation, therefore, broke up, little satisfied with what it had done, but full of hope. After the lapse of some time, the pains set in with redoubled violence, and the patient felt an imperious desire to go to stool, which she was unable to satisfy. A surgeon, sent for, found a foreign body engaged in the sphincter ani, extracted it, and discovered one of the bones of a fœtus: several other bones were discharged in the same manner, and the woman experienced great relief. For several months, she continued to discharge fragments of bone per anus: and at length, in the year 1829, recovered perfect health. The physicians had strongly recommended the patient to abstain from all participation in the pleasures of marriage; a counsel which, it appears, she followed, up to 1831, when, after a copious loss of blood from the uterus, the catamenia became suspended, and the abdomen swelled. As the tumefaction increased day after day, the patient got alarmed; but an accoucheur, who carefully examined the vagina and uterus, assured her she was not pregnant. At about the fifth month the movements of an infant were clearly perceptible, and put an end to all doubt; but the internal genital organs, again explored, seemed to have undergone no change. The movements soon ceased; and, in a few weeks after, fragments of a fœtus were discharged, as before, through the anus; but on this occasion, fortunately, without any pain. Only a portion of the fœtus was thus eliminated; the abdomen, however, gradually subsided, and the woman now enjoys a perfect state of health.

52. *Case of Arm Presentation, with Remarks.* By EDWARD RIGBY, M. D., Nov. 13th, 1835.—Elizabeth Bloore, æt. 35, mother of seven children. I was sent for by the midwife, on account of a presentation of the elbow. On examining, I found the elbow not very far advanced; os uteri well dilated; membranes ruptured; passages cool; scarcely any pains; rectum and bladder empty. I passed up my hand towards the shoulder, which was to the left side, and, feeling for the scapula, ascertained which was the posterior surface of the thorax. I passed my hand along its anterior surface, and soon reached a foot, which I brought down, and shortly after the other also. As the pains were very slow, I gave her a dose of ergot; they increased. The expulsion was carried on very slowly, and a movement of the limbs of the child evidently showed that it was alive. The arms came down with the breast, and I could soon reach the chin, which I gradually brought down to the perineum, pressing, with two fingers of my left hand, against the superior maxillary bone. It required some time and exertion before the head passed over the perineum. Having previously felt but little pulsation in the umbilical cord, I had pressed it towards the left sacro-iliac synchondrosis. On being born, the child (which was full-sized) gave a convulsive gasp; and having poured some spirit on the *scrobiculus cordis*, and excited two or three more gasps, I tied the cord, placed it in a warm-bath, and inflated the lungs. In the course of twenty minutes the respiration gradually increased; at length it suddenly opened its eyes and cried, to the great delight of the bystanders. The placenta came away easily, and the mother did well.

Every thing had been done by the judicious midwife who attended her, to render turning as easy and favourable as possible. She had sent for me the instant the nature of the presentation was evident. The rectum and bladder had been emptied, and the patient kept as still as possible. The elbow had advanced but little; I passed my hand along the anterior surface of the child, because in this direction there is not only more room, but also the best chance of coming quickly to the feet. I made a point of bringing down both feet, as by doing so the child enters the brim more readily, whereas when merely one foot is taken hold of, the pelvis descends unequally, and the other ischium is apt to lodge against the brim. This latter mode has been recommended by some, on the plea that by having one leg turned upon the abdomen, the presentation not only resembles more nearly that of the nates, which is well known to be more favourable for the child, but also the cord is thus defended from injurious pressure. I adopted this

view myself for some time, but abandoned it from the degree of resistance which the pelvis of the child experienced in entering the brim, and I may state decidedly that I have turned with more ease and success since I have made a point of bringing down both feet wherever it was possible. This practice has also been confirmed by the highest continental authorities. In order to give the child the best chance of being born alive, I determined that the expulsion (now that the position was become a natural one) should be effected as much as possible by the natural powers: as the pains were very sluggish, the ergot was administered, and with the desired effect. As the child gradually descended with the contractions of the uterus, the head was by this means kept with the chin pressed upon the breast, and the arms thus prevented from slipping above it. The head, therefore, descended in the most favourable position into the pelvis, and experienced so little delay in its passage, that the cord was exposed to no serious degree of pressure. To the more experienced of my readers these minutæ will probably seem unnecessary, but to the junior members of our profession I trust they will not be altogether void of interest.

It has been observed by Professor Naegelé, of Heidelberg, that in many cases where the arm or shoulder has presented, the patient had frequently suffered from severe cramp-like pains in the abdomen during the last few weeks before labour, in which the uterus had sympathised, and had thus been affected with partial and spasmodic contractions; by this means the fundus had been pulled down unequally to one side, and the position of the child altered,—the long axis of its body no longer corresponding to the axis of the brim.

This is not the common obliquity of the uterus, once so much talked of as being a frequent cause of malposition of the child, and which has been long since proved to have no effect whatever in producing it. In the above case I therefore inquired into the state of the patient's health before labour, and found that "for the last two months she had been troubled with cramps all over her belly, particularly the sides and hips,—so much, that she had great difficulty in lying down." My excellent friend, to whom I am indebted for this curious fact, informed me that he was first induced to notice it in the case of a patient, who had been pregnant five times, and in each labour the child presented with the arm or shoulder. Being requested to attend her in her sixth confinement, and struck with the peculiarity of her former labours, he carefully investigated the history of each, and found that the only unusual symptom which he could detect was the severe attacks of spasmodic pain in the abdomen, which came on during the last weeks of pregnancy. Having endeavoured in vain to check them this time by opiate and antispasmodic remedies, he ordered a starch enema with a small quantity of tinct. opii every night: the attacks were effectually stopped; the child for the first time presented right, and was born alive. The fact is interesting, and deserves notice.

In almost every case to which I have been summoned, where turning has been necessary on account of malposition of the child, I have made a point of ascertaining whether the patient had suffered in this manner shortly before labour, and in many instances have found it to be the case.—*Lond. Med. Gaz.*

53. *Rupture of the cæcum during labour.*—The subject of this case was a woman with her first child, who had enjoyed good health during the whole period of pregnancy and a favourable accouchement. The mother and husband, however, of the patient insisted that they heard at the moment when the child was expelled, a peculiar noise. During the first twenty-four hours no unfavourable symptoms presented themselves; the patient complaining only of griping, and a slight pain in the vicinity of the right groin. Fever, vomiting, acute pain in the abdomen, &c., then came on, and the patient died 72 hours after delivery.

On post-mortem examination a transverse rent, two inches in extent, was found in the cæcum, through which a considerable quantity of fecal matters were effused into the peritoneal cavity.—*Rev. Méd.*, Nov. 1836, from *Preussische Med. Zeit.*

54. *Prevention of abortion.*—Among the causes which have been indicated as productive of abortion, Dr. STRAET insists that there is one, the influence of which

has not been duly appreciated: this is the pressure exercised on the uterus, by the bladder and rectum, when these organs are distended. Many women have the bad habit of retaining their urine as long as possible, and physicians should point out to them the dangers of it. Towards the third month, most pregnant women become costive, and the fear of inducing abortion prevents their having recourse to laxatives; most of these women are condemned to a horizontal position, prevented taking exercise, &c. Now, it is readily conceivable that if the rectum is distended by fecal matters, it will prevent the uterus rising from the pelvis, and will compress and incommode it. Moreover, when the patient experiences the want of going to stool, she is compelled to make continued and violent efforts, which are very apt to induce abortion. Dr. Streit advises to avoid this evil, that an enema of oil and water should be administered every other day to pregnant women, who are subject to abortion; commencing a month before the period at which abortion is likely to occur. Several cases are given in which these views have been acted on, with success.—*Siebold's Journal*.

55. *A Report of thirty-four cases of Puerperal Convulsions.*—By ROBERT LEE, M.D., &c.

CASE I. —, æt. 22; first pregnancy; ninth month; unmarried. Edinburgh, 1816.—Numerous violent fits of convulsion at short intervals, without a return of consciousness, for twelve hours. Orifice of uterus soft and dilatable; but no sign of labour. The pulse was rapid and feeble. The fits continuing, with coma, the child was turned without difficulty and delivered. Death in six hours. Blood-vessels of brain distended. No other morbid appearance observed.—V. S. ad 31; head shaved; cold lotion; calomel; enemata; artificial delivery.

CASE II. —, æt. 26; first pregnancy; ninth month. 12th July, 1823.—Fifty hours in labour. Head of child low in the pelvis. Vagina and perineum rigid; pulse full and strong; face flushed; occasional incoherence and slight convulsive tremors of the face and extremities. Venesection, followed by two severe fits of convulsion and insensibility. Unsuccessful attempts to deliver with the long forceps. Craniotomy. No fit after delivery. Consciousness soon returned. Uterine inflammation. V. S. 3xviii. Cathartics. Cured.

CASE III.—Mrs. L.—, æt. about 26. January 22, 1827. First pregnancy; seventh month.—Eight weeks before delivery suddenly seized with coma, from which she recovered after copious V. S., &c. Headache, giddiness, and partial loss of speech, but consciousness and memory have remained. Slight hemiplegia of the right side. Pulse 90. Went to the full period; labour natural. In a few hours, convulsions, coma, dilated pupils; retention of urine; and she died on the 29th. Upper surfaces of both hemispheres partially coated with a thick firm layer of lymph. Softening of the brain below. The veins distended with firm coagula. Ventricles filled with serum. The ventricles did not collapse after the fluid had flowed out. Copious V.S. and cupping, head shaved, cold lotions, and blisters; Cathartics; low diet.

CASE IV. —, æt. 20; 1827. First pregnancy; seven and a half months; unmarried.—Had attacks of epilepsy for several years during early life. Headache, drowsiness, loss of memory; paralysis of right inferior extremity after a slight fit of convulsion and coma. Labour natural; child alive. No return of symptoms after delivery. V.S.; cupping; head shaved; cathartics; low diet. Cured.

CASE V. —, æt. 24, 21st June, 1828; third or fourth pregnancy; seven and a half months.—Subject to epilepsy in early life. After suffering for several days from an uneasy sensation of weight in the head and giddiness, was suddenly attacked with convulsions, of which she has had several fits, and has little or no consciousness in the short intervals. Os uteri closed. No symptom of labour. 2nd June: no fit, but considerable stupor continues. Pulse 80; copious alvine evacuations. 21th: no return of convulsions; and she went to the full period, and was safely delivered of a living child. V.S. 3xx.; head shaved; lotions; enemata; cathartics; V.S. 3xii.; low diet. Cured.

CASE VI. —, æt. 18, 24th Jan., 1829; first pregnancy; 9th month.—Delivered at 11 A.M.; labour natural. The expulsion of the placenta was soon followed by a strong fit of convulsion. V.S. was immediately employed. At 4 P.M., frequent severe fits, without any intervals of consciousness; V.S. repeated. At 8 P.M., the

fits and stupor continued, when forty drops of laudanum were prescribed in my absence.

25th.—Fits continue; twenty drops of laudanum, and sinapisms to the legs, were then ordered by her medical attendant.

26th.—Several fits of convulsion in the course of the night. Has taken sixty drops of laudanum at three doses, which appeared to calm the violent agitation after the paroxysms.

27th, 10 A.M.—Severe and frequent fits during the night; breathing stertorous; pulse rapid and feeble.

Died on the 28th.

I examined the brain, but except a slight turgescence of the blood-vessels of the pia mater, no morbid appearance was observed.

V.S. \S xxxv.; V.S. \S xvj. Head shaved; enemata; calomel; ol. ricini; tinct. opii; sinapisms, &c.

CASE VII.—Mrs. —, æt. 21, first pregnancy; ninth month, unmarried. 1828. A weak, delicate woman; had several fits of convulsion in the first stage of labour, in consequence of which she was severely bruised in different parts of the body. She was completely insensible in the intervals. The pains ceased, and the os uteri being only partially dilated, and the head of the child being too high in the pelvis for the forceps, the delivery was completed by craniotomy. The fits soon after ceased. V.S. \S xxv.; do. \S xij. Cured.

CASE VIII.—Mrs. H., æt. 21, first pregnancy; ninth month. Sept. 16th, 1828. Constipation and headache for several days; severe fits of convulsion; insensible in the intervals. Pupils dilated; pulse 80, full and strong; face flushed; os uteri slightly dilated; feeble irregular uterine pains. After venesection and free evacuation of the bowels the fits ceased, and she was delivered the next day, without assistance, of a living child; but it died in 30 hours with convulsions. V.S. \S xxxv.; hirudines; head shaved; calomel; enemata. Cured.

CASE IX.—Mrs. W., æt. 33, second pregnancy; ninth month. Oct. 6th, 1828. Had convulsions during her former labour. Headache, giddiness, and drowsiness, during the latter months of pregnancy. Venesection recommended, but not employed. In the first stage of labour, during the night, several severe fits at short intervals; muscles of the left side most affected; face flushed; pupils dilated; pulse rapid, feeble, irregular; os uteri widely dilated; head pressing through the brim of the pelvis.

7th.—Child born alive this morning without artificial assistance. The fits soon after ceased, and consciousness partially returned. Left side slightly paralysed; pupils dilated.

11th.—No return of fits, and the paralysis is gradually disappearing. From this period she recovered the use of the arm and leg.

On the 4th of January, 1829, she died in a fit of convulsion, with which she was seized soon after taking an emetic, without advice.

Serum was found in the ventricles of the brain. A portion of the upper part of the right hemisphere was in a state of complete ramollissement. Both the cortical and medullary parts of the brain were changed into a thin substance like custard. There were tubercles in the lungs.

V.S. \S xx.; cupping, \S xij.; calomel, &c.; head shaved.

CASE X.—Mrs. P., æt. about 25; eighth month. Jan. 27th, 1828. After a violent quarrel with her husband, who came home intoxicated, complained of headache and general indisposition. At 7, A.M., seized with strong convulsions, of which she has had several paroxysms. 11, A.M., insensible; tongue lacerated; a bloody foam issues from the mouth; fits continue, with short intervals, when the muscles are affected with spasm. Pulse slow, full, and strong; os uteri dilated; head of child low in the pelvis. During the continuance of the fits the child was expelled without artificial assistance, at 8, P.M. Afterwards had puerperal mania. V.S. \S x.; V.S. \S xxvj. Head shaved; stimulating enema; cupping \S xij.; do. \S xij. Cured.

CASE XI.—Mrs. B., æt. 30; ninth month. April 15th, 1829. Headache, vertigo, great depression of spirits, during the seventh and eighth months of pregnancy. Convulsions; hemiplegia of left side took place seventeen days before labour. Labour natural. Died comatose three days afterwards.

Serum in the ventricles of the brain. A small scrofulous tumour adhering to

the basilar artery. A portion of the right anterior lobe of the cerebrum softened, and of a yellow colour.

V.S. ξ xvj.; cupping, ξ xvj.; do. ξ xij.; head shaved; lotions, blisters, cathartics, &c.

CASE XII. —, æt. 30; fourth or fifth pregnancy; ninth month. 1829. Violent convulsions, and insensibility in the intervals, for twenty-four hours, without any sign of labor. After repeated copious venesection, &c., and the fits continuing with undiminished violence, Mr. Stone agreed with me in the propriety of artificial delivery, which I immediately performed by turning the child. Considerable time and force were required to dilate the orifice of the uterus, which grasped the neck of the child so firmly after the body and extremities were delivered, that great force was required to extract the head. The fits ceased as soon as the delivery was completed, and she soon recovered. V.S. from ξ l. to ξ lx.; cupping; enemata; calomel; artificial delivery: ice in a bladder to the shaved head.

CASE XIII. —, æt. 20; first pregnancy; eighth month, 1829. Delicate and hysterical; headache and giddiness for several days. From twenty to thirty severe fits of convulsion during fifteen hours; insensible in the intervals; pulse 80; face flushed; bowels costive. Labour came on twenty-four hours after the first attack, and a dead child was soon expelled. No fit after delivery. Consciousness did not return for several days. Uterine and crural phlebitis followed V.S. ξ xij.; V.S. ξ xx.; head shaved; ice to the scalp; calomel; enemata. Cured.

CASE XIV. —, middle age; first child; near the full period. March 23d, 1829. Labour commenced four hours before the first fit, which was long and severe. Complained of headache and giddiness for several weeks before. Os uteri fully dilated at 10, P.M.; about the half of the head in the cavity of the pelvis. The pains completely ceased, after the convulsions occurred, till 1, A.M., of the following morning, when they returned, and at 2 o'clock a dead child was expelled.

26th.—Partially conscious; no fits. Attacked on the 27th with uterine inflammation, and died in three days.

Body not allowed to be inspected.

V.S. ξ xxx.; leeches, xij.; head shaved; lotions, enemata, blisters, &c.

CASE XV. —, a young woman; first pregnancy; ninth month. Sept., 1829. Had frequent and violent fits of convulsion soon after the commencement of labour. Four pints of blood had been drawn from the temporal artery by her medical attendant before I saw her. Os uteri slightly open; no pains. Convulsions continued five hours, when a dead child was expelled. No fit after delivery; but she continued comatose, and died soon after. Copious V.S.; head shaved; enemata; calomel.

CASE XVI. —, æt. 25; first pregnancy; ninth month. April 8th, 1830. Hysteria at the age of 15. At the end of the ninth month frequent fits of convulsion in the course of twelve hours. Consciousness returned after venesection. Severe headache, and occasional spasms of the face and extremities. Labour natural. Uncertain if the child was alive. V.S. ξ xxx.; calomel, gr. x.; enemata; cathartics; cold to the shaved head. Cured.

CASE XVII. —, æt. about 20; first pregnancy; ninth month; admitted into the St. James's Infirmary, Jan. 1, 1831. Incoherence, followed by convulsions towards the end of the first stage of a protracted labour. Labour pains strong and regular, and the greater part of the head in the cavity of the pelvis. The fits were relieved after venesection, and she was delivered in a few hours of a dead child, without help. V.S. ξ xviii. V.S. ξ x. Cured.

CASE XVIII. —, æt. 30. May 9th, 1832. Had epilepsy when a child. Labour began at 8, A.M., 7th May. Membranes ruptured in the night; os uteri dilated to the size of a crown on the morning of the 8th. Pains feeble; complained of headache; pulse full and slow. Venesection; enema. Labour continued till the morning of the 9th, when severe convulsion fits supervened. Venesection repeated. Fits and unconsciousness continued for several hours, and the pains went entirely off. The head being still high up in the pelvis, and the os uteri rigid and undilated, craniotomy was performed. No fit after delivery. V.S. ξ xvj.; enema; cath.; V.S. ξ xxv.; head shaved; cold lotions; enema; craniotomy. Cured.

CASE XIX.—MRS. B., æt. 30; first pregnancy; ninth month. Autumn, 1831. Six hours in labour, under the care of Mr. Girdwood, of Paddington. At the end of the first stage of a labour, incoherence, stupor, and several slight fits of convulsion. The symptoms were immediately relieved by venesection, the pains continued, and a living child was soon expelled. V.S. ξ xxxvj. Cured.

CASE XX. —, age not ascertained; patient in St. Marylebone Infirmary. December, 1831. Had a number of severe fits of convulsion soon after the commencement of labour. No relief was obtained from venesection; and the pains having entirely ceased for many hours, and the head of the child being above the brim of the pelvis, and the os uteri only partially dilated, craniotomy was performed. Only one slight fit occurred after delivery, and consciousness returned gradually. Copious V.S. Cured.

CASE XXI. —, middle age, October, 1833, first pregnancy. Had been long in labour, when convulsions came on, without any complaint of headache. A feeble child, born alive. Convulsions ceased immediately after delivery. V.S. \S xxx. Cured.

CASE XXII. —, æt. 20, 30th December; first pregnancy; unmarried. Was called to see a patient, æt. 20, in an adjoining parochial infirmary, who had been attacked with furious fits of convulsion sixteen hours after the commencement of labour. Os uteri fully dilated; head of child jammed in the brim of the pelvis. An ear could not be felt. Fits continued still more frequent and violent after V.S. Pulse rapid and feeble. Labour pains have entirely ceased. Head perforated, and great force required to draw it through the pelvis. No fit after delivery. Sensibility returned the day after. V.S. \S xxx. Craniotomy. Cured.

CASE XXIII. — Kirby, æt. 30, St. Marylebone Infirmary, May 23, 1834. Second child. Pelvis distorted by rickets. Delivered by craniotomy two years before, after a tedious labour. Two strong fits of convulsions took place on the 23d May, when she had been six hours in labour. Fœtal head above the brim of the pelvis. Meconium passing. Uterine contractions incessant. Abdomen tense, hard, and painful. Craniotomy. No fits after. V.S. \S xii. Cured.

CASE XXIV. — Mrs. G —, æt. 28, Feb. 25, 1833. First pregnancy, 9th month. After eating roasted pork for dinner and supper, was seized with vomiting, convulsions, and insensibility, at 3, A.M.; after V. S. and an enema the fits became slighter; the pulse extremely rapid and feeble. The fits, however, returned occasionally till 10, A.M., when labour-pains came on. At 1, A.M., a dead child was expelled. Fits and insensibility continued four hours after.

26th. — The fits had ceased and consciousness had returned, though imperfectly. Retention of urine. She died five days after, with symptoms of uterine inflammation. Body not allowed to be opened. V.S. \S xx.; head shaved; enemata, &c.

CASE XXV. — A young woman. St. Marylebone Infirmary, July 5, 1833. First pregnancy. Delirium and slight convulsions came on suddenly, after the labour had lasted upwards of 21 hours. Vagina rigid, hot, and tender. Os uteri not fully dilated. V.S. procured no relief. The head being beyond the reach of the forceps, the operation of craniotomy was performed. The fits immediately ceased. Consciousness was not perfectly restored for several days. Copious V.S. Craniotomy. Cured.

CASE XXVI. — A young woman, delivered at 3, A.M., on the 20th May, 1828. Several fits of convulsion soon after, of no great violence.

1, P.M. — Fits have ceased; consciousness partially restored; appears heavy and oppressed, and complains of headache. Pulse 50, full and strong. V.S.

10, P.M. — No return of convulsions. V.S. \S xxv. Calomel, gr. vi. Haust. Sennæ. Cured.

CASE XXVII. — In December, 1829, I examined the body of a woman who had died after puerperal convulsions. She was not seen by me during life. Insensibility and convulsions came on during labour, which was protracted. The pulse was stated to have been rapid and feeble. Delivery was completed by craniotomy, and she died comatose three days after. A table-spoonful of serum was found, on inspection after death, at the base of the brain. The pia mater around the tubular anular vascular. Brain healthy.

CASE XXVIII. — Mrs. M —, æt. 28, was suddenly attacked with convulsions, eight days after a natural labour. She had ten severe fits in less than two hours. In the intervals she was completely insensible, with stertorous breathing; dilated pupils; the pulse 110, feeble. The fits went off in a few hours, but she remained for several days in a drowsy confused state. The attack followed the use of very indigestible food. Has since been twice confined, and had no convulsions. Cupping \S xii. Calomel; Cathart. Enema. Head shaved. Blister. Cured.

CASE XXIX. — Mrs. P —, æt. 26, April, 1835. First pregnancy, full period.

Returned home after midnight, from a large dinner party, at which she had partaken of a variety of dishes and wines, and had been seated near a large fire. Labour came on at 4, A.M., and soon after she became incoherent, and said she felt her teeth falling out of her head. On attempting to drink some warm tea, she bit a large piece from the edge of the china cup, and crushed it between her teeth. Convulsions of great violence immediately followed. Copious V.S. and an enema gave no relief. In an hour and a half the head of the child was within reach of the forceps, and it was applied, and the child was soon extracted alive. She died at 11, A.M. The perineum was extensively lacerated, from the impossibility of retaining her for an instant in the same position. The child was known to be alive before delivery, from the cord being around the neck and felt pulsating. Body not allowed to be examined. V.S. $\tilde{\text{S}}$ xxx.; V.S. $\tilde{\text{S}}$ xii. Enema. Head shaved. Delivered with the forceps.

CASE XXX. —, *æ*t. 18, unmarried; first pregnancy; end of eighth month. March 3, 1835, St. Marylebone Infirmary, 11, A.M. Has had seven fits of convulsion. Neck and face swollen. Os uteri fully dilated. Face presentation. Pains have nearly ceased. An attempt was made to deliver with the forceps, but it failed, from the impossibility of keeping her steady.

3, P.M.—Fits continuing with undiminished severity, the operation of craniotomy was performed.

4, P.M.—Four fits since delivery, from which she was greatly exhausted. Forty drops of liquor opii sedat. administered, after which the fits became much slighter. The dose was repeated several times, and the fits gradually went off. V.S. $\tilde{\text{S}}$ xx.; V.S. $\tilde{\text{S}}$ x. Cured.

CASE XXXI.—A lady, about 26 years of age, who had been in labour with her first child for no long period, was seized with convulsions, for which V.S. was immediately resorted to by her medical attendant. The fits continued with violence till the head was pressing upon the perineum, and it was resolved in consultation to deliver with the forceps. While placing the patient in the proper position for performing the operation, the child was expelled alive by the natural efforts, with the funis round its neck. The fits instantly ceased, but she remained in a state of stupor for ten hours. V.S. $\tilde{\text{S}}$ xxx. Head shaved; enema; cold lotions; cathartics. Cured.

CASE XXXII.—August, 1836. A young woman in the St. Marylebone Infirmary had fourteen fits of convulsion in the first stage of labour. It was her first pregnancy. Copious V.S. was employed without effect. I delivered her with the forceps. The child was dead. She had only one slight fit afterwards. Cured.

CASE XXXIII.—Mrs. A—, *æ*t. 25; eighth month; fourth pregnancy. Aug. 17, 1836. Yesterday (the 16th) dined on currie and rice, and ate bacon and eggs at tea.

17th.—Awoke at one o'clock in the morning with violent pain in the back part of the head and sickness, for which she took a strong cathartic. A physician was called to her soon after, and ordered five grains of calomel and an antispasmodic draught, which relieved the symptoms. During the forenoon she remained in a drowsy state without complaining. At mid-day a fit of convulsion occurred. At 3, P.M., another and more violent fit followed. I saw her soon after this. The pulse was extremely rapid and feeble, and it became altogether imperceptible at the wrist on the abstraction of eight ounces of blood from the arm. More blood would not flow from a large orifice in the vein. Orifice of the uterus slightly open; labour pains commencing. Membranes ruptured artificially, and liquor amnii discharged. An hour after, four ounces of blood were removed from the temple by cupping, when the pulse again became imperceptible. At 6, P.M., the os uteri being dilated, and the head in the pelvis, I delivered with the forceps. The child was dead. The fits continued, and she died at 8, P.M. V.S. $\tilde{\text{S}}$ viii. Cal. gr. x.; Haust. Antip. Cal. gr. xv.; Cupping, 4 ounces. Head shaved. Enema.

CASE XXXIV.—Mrs. P—, *æ*t. 35, a widow, in the eighth month of her third pregnancy. For fourteen days had influenza and severe headache. At 1, P.M., 8th February, 1837, attacked with convulsions. At 8, P.M., she had had 16 severe fits. V.S. had been employed, and the hair cut off. At 9, P.M., pulse 110, and feeble; hands and feet cold; stertorous breathing. When the fits occurred, the muscles on the right side of the body became first affected. In about a minute the spasms left

this side, and the muscles of the opposite side became affected. Pupils dilated. Membranes ruptured. At midnight the fits continued, and the head not being sufficiently advanced for the forceps, she was delivered by craniotomy. Only one slight fit occurred after delivery, and consciousness was restored in the course of the day. V.S. 5xl. Head shaved. Calomel. Enemata. Cured.—*London Med. Gaz.*, Oct. 1837.

56. *On the induction of premature labour.*—By EDWARD A. COREY, Surgeon to the East London Lying-in Institution. Mrs. H., of short stature, and aged about 30, had twice undergone the operation of embryotomy. I attended her, for the first time, about three years since, when the same operation was again deemed necessary, and was performed in the presence of a most respectable practitioner. The pelvic deformity was of the reniform character, the space between the sacro-vertebral angle and symphysis pubis (conjugate diameter), being about two inches and three-fourths. It was consequently determined, should the recurrence of pregnancy render it necessary, that the premature induction of parturition, at the seventh month of utero-gestation, should be had recourse to, as affording the only means of saving the infant from the murderous application of the perforator. She had again become pregnant, and it was calculated that she had arrived at the seventh month of her pregnancy, about Thursday, the 14th of September last. From some remarks and cases which have been recently published by Dr. F. Ramsbotham, it appears that he has succeeded in effecting the induction of premature labour, "*solum ope secalis cornuti.*" I was, therefore, led to employ this substance according to the formula he has suggested, viz:—℞ Secal. Cornuti ʒiij.; Aq. Bullient. ʒviij. infunde per semihoram, et adde Acid. Sulph. Dil. ʒij. Syr. Simplic. ʒij. Tr. Card. Co. ʒij., ut fit. Mist. ejus cap. cochl. ij. mag. q. quartâ horâ.

The first dose of this mixture was ordered at 2, p.m., on the 14th of September. At 6, p.m., soon after the administration of the second dose, the uterine energy became slightly excited; and it was interesting, as well as satisfactory, to observe its gradual increase soon after the repetition of each dose of the medicine. On the next day (Friday) at 1, p.m., the parturient pains were tolerably active, but at considerable intervals. A vaginal examination was instituted, and the membranes were distinctly felt pressing against the undilated os uteri. Saturday, at 11, a.m., the pains had gradually diminished in force and frequency since my last visit, and she had experienced no pain from yesterday at 4 o'clock, p.m., to the present time, and was, to use her own expression, "quite well again." The institution of another vaginal examination demonstrated that the os uteri had not, in the least degree, increased in dilatation, and that the pressure of the membranes which had been previously experienced, even during the interval of pain, had now entirely subsided. She expressed great anxiety and apprehension as to the result.

On the same day, about 6, p.m., I again visited her, and found her precisely in the same situation. I was fearful of repeating the *secale cornutum*, lest it might destroy the infant. I therefore thought it most prudent to rupture the membranes, the distension of which had now completely subsided; and this, having converted the nail of the index finger into a saw, I accomplished with some little trouble.

She was again visited on Sunday, at a little after 1, p.m. She remained in a similar condition, and there had been no accession of the pains of parturition.

On Monday she had not yet experienced any pain, and the bowels being in a constipated state, I thought it prudent to prescribe an aloetic purgative, with a carminative addition, which had the effect of thoroughly evacuating the bowels, and exciting the uterus to action; so that early on Tuesday morning the pains of labour commenced with considerable activity, and continued with but slight intermission until six o'clock in the evening, when she was delivered of a living infant of healthy appearance. The fœtal head, notwithstanding the severity of the parturient paroxysms, occupied several hours in its passage through the contracted pelvis, and, after expulsion, presented on its lateral portion an evident indentation, and was also considerably flattened. The whole process terminated as in a common accouchement. The placenta was expelled, with but little assistance, about half an hour after the birth of the infant, which was restored in ten minutes by immersion in the warm bath, and by artificial respiration. The child remains at the present time (Oct. 16) healthy and vigorous, takes the breast freely, and there is every pro-

bability that it will continue to live. The patient has not suffered the least pain or inconvenience since her delivery; in short, I never witnessed a more rapid recovery even in an ordinary case.

Remarks.—The necessity for the induction of premature labour in the present instance must, I think, be evident to every well-informed obstetrician; and I also am of humble opinion, that the means so carefully adopted for the production of so desirable an object were based upon the soundest principles of obstetrical science. I am induced to believe, that had I continued the administration of the secale cornutum for a longer period, that the expulsion of the infant might most probably have been effected without the necessity of the least manual interference; but I was deterred from persevering in its use from the apprehension that it might exert a deleterious effect upon the infant, and also injure the mother. I was fully aware of the great importance of maintaining the membranes entire as long as possible, in order to be able with greater certainty to insure the safety of the infant; but as the secale failed to produce the anticipated result, I was reduced to the alternative of rupturing the membranes, even with some risk to the infant, rather than hazard, perhaps, irretrievable injury both to the mother and child, by persevering in the administration of the ergot. The induction of premature labour appears to have been practised by the ancient physicians, more particularly by Ætius and Paulus Egineta, who recommended it in cases of extreme contraction of the pelvis; but it was not until about the middle of the last century that the most eminent practitioners in London decided on its propriety and morality. It may be laid down as an incontrovertible obstetrical axiom, that it there be less than the space of three inches, and more than two and a half, between the sacral promontory and the pubes, that the induction of parturition at the seventh month of utero-gestation becomes indispensably necessary, and its utility will be rendered more evident when we consider the disproportion between a structure thus constituted, and the fœtal head at the full period of intra-uterine maturity. From accurate and multiplied observations, Madame Lachapelle has arrived at the conclusion that the biparietal diameter of the fœtal head at the seventh month of pregnancy does not measure more than three inches, and sometimes even less; and, therefore, allowing for its compressibility in consequence of incomplete ossification, it may be easily imagined that no very considerable difficulty will be experienced in its passage through such a pelvis as I have mentioned. The records of the science prove most satisfactorily that the woman is not subjected to greater risk by premature labour induced artificially, when carefully performed, than by spontaneous parturition at the full period of gestation. The existence of some morbid affection, rupture of the uterus, or some accident entirely independent of premature delivery, has been invariably discovered in those cases which have had a fatal termination. Denman operated eight times with complete success (*Introd. to Midwifery*, vol. ii. p. 221). M. Salomon mentions sixty-seven, Kluge twelve, and Ferrario six, which also terminated successfully (*Journal Compl. des Sc. Méd. &c.*, tome xxxiv. p. 339). In the practice of Reisinger (*Dict. de Méd.*, 2nd edit. tome i. p. 429), one died in fourteen; but Merriman (*Synopsis of Difficult Parturition*, &c., p. 161) has not lost one in forty-six upon whom he appears to have operated.

Artificial premature delivery does not, however, terminate so happily with regard to the infant. In forty-seven cases which occurred in the practice of Merriman (*Synopsis*, &c., p. 180), twenty-six were dead, five were born living, but not possessed of viability, and sixteen lived. Hamilton has been more fortunate, and in twenty-seven cases has succeeded in preserving the lives of twenty-three (*Ryan's Manual*); Ferrario, five in six; Kluge, nine in twelve; Salomon, thirty-four in sixty-seven; and Bureklard (*Thesis, Strasburg*, July 20, 1830), thirty-five in fifty-two. Premature delivery has also been recommended in cases entirely unconnected with pelvic distortion. Its performance has been proposed by Mai, Rügen, and Carus, in those instances where the fœtus habitually dies some time before the expiration of the full period of gestation, as well as in some diseases induced by pregnancy, which are dangerous to the mother, as metrothages, retroversion, &c. Siebold, according to Kilian (*Die Operative Geburtshilfe*, vol. i. p. 380), practises it in ascites and hydrothorax, and M. Costa (*Revue Médicale*, 1827, tome i. p. 313), thinks it necessary in diseases of the heart. Conquest (*Outlines of Midwifery*), Ingleby in his work on Uterine Hemorrhage, Busch (*Lehrbuch der Geburtshilfe*, 2nd edit., 1833), and other authorities, have also recommended it in cases entirely

independent of pelvis distortion. My limits will not permit me to discuss the propriety of its adoption in the various morbid conditions just alluded to, but it is evidently the only rational means of relieving the woman who has the misfortune to be affected with diminution of the natural dimensions of the pelvis, and of rescuing her infant from inevitable destruction.

The operative methods which have been proposed and practised for the induction of premature labour are very numerous, but the one most usually had recourse to, and upon which the greatest reliance can be placed, is the sudden evacuation of the liquor amnii, either manually or instrumentally. Some writers of celebrity have advised its gradual discharge, but the majority have decided in favour of the former, as by the sudden vacuity of the uterus that organ is more likely to take on a brisk parturient action, by which means there will be a greater probability of saving the life of the infant. I consider, also, that there can be no objection to the previous administration of the ergot, according to the formula, and on the respectable authority of Dr. Ramsbotham; and in some cases I am inclined to believe it may (*per se*) produce the desired effect. I may add, in conclusion, another mode of procedure, which appears to be in high repute with the practitioners of the French school, although I cannot recommend it on my own personal experience. Velpeau (*Traité Complet de l'art des Accouchemens*, tome ii., p. 413), thus mentions it. "La dilatation au moyen d'un morceau d'éponge, comme la imaginé M. Kluge, est d'un effet beaucoup plus certain. L'irritation qu'en résulte est permanente, progressive, régulière, et soutenue par la pression qu'exerce l'espèce de tampon qu'on maintient en même temps dans le vagin. Sous l'influence d'une pareille excitation, la matrice entre bientôt en action, et il est difficile que le travail n'acquière pas rapidement un énergie suffisante."—*Lond. Med. Gaz.*, Oct. 1837.

57. *Retroversion of the Uterus*.—A very remarkable case of this, and one we believe perfectly unique, has been recently communicated to M. P. Dubois, by Dr. Mayor, of Lausanne. The uterus was completely retroverted, the recto-vaginal septum lacerated, and through this laceration the retroverted uterus, with its contents, a fetus of three months and a half, passed entirely out of the vulva. We shall endeavour to give a diagram illustrative of this accident in our next number, with some of the details of the case.—*La Presse Médicale*, March 11, 1837.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

58. *Poisoning with the Daphne Mezereon*.—The following cases, illustrative of the poisonous effects of the berries of the *Daphne mezereon* on the human subject, communicated to the *Lancet*, (Oct. 7, 1837,) by Dr. JAMES GRIEVE of Dumfries, is a valuable contribution to our toxicological knowledge, but few cases of the same description being on record, none so far as we recollect, in which the narcotic influence of the plant was so marked as in the elder girl.

"On the 29th August, 1837, at the village of Lochmaben, eight miles from Dumfries, three children, of the respective ages of two years, two years and a half, and three years, whilst amusing themselves in a garden, swallowed several of the red berries of the *D. mezereon*. The eldest girl was, by her parents, detected with some of the berries in her hand. In a few minutes after leaving the garden they were all seized with violent vomiting and hypercatharsis, which continued for some hours. Some of the berries were ejected from the stomach; a few also passed, unchanged, through the bowels. Mr. Brown, a medical practitioner in the village, was called in, and administered a solution of the tartarized antimony to each of the little sufferers. In the youngest child, a boy, the above symptoms soon ceased, and he suffered no further inconvenience; in the second child, a girl, the vomiting and purging were succeeded by considerable tympanitic distension of the abdomen, which speedily subsided on the administration of a common enema, and she also soon got well. The eldest girl, however, was destined to suffer more severely; she gradually became listless, languid, and drowsy, and exhibited other signs of approaching narcotism. Mr. Brown became alarmed, and I was sent for from Dumfries.

"On my arrival at Lochmaben, nearly six hours from the time the fruit had

been swallowed, I found her labouring under the ordinary effects of a powerful sedative; she was lying upon her back, her countenance was sunk and ghastly, her eyes dull, the pupils were slightly dilated, and contracted sluggishly on the approach of a lighted candle; when allowed to fall asleep her eyes were turned up, the respiration was slow, but free from stertor; pulse 44, very compressible, and occasionally intermitting; when roused she feebly asked for cold water to drink, but made no complaint of pain. From the time which had elapsed between my arrival and the reception of the person, and the little patient having already vomited and purged very freely, I judged it unnecessary to have recourse to the further exhibition of emetics, or to the use of the stomach-pump, the indication to be fulfilled being to rouse and sustain the energies of the system, and enable it to overcome the baneful effects of the berries. I accordingly had immediate recourse to stimulants. A teaspoonful of brandy conjoined with a few drops of the liq. ammoniæ, was administered every quarter of an hour; sinapisms were applied to the feet; the spine was well rubbed with warm spirit of turpentine, and she was carried about the room in the arms of her nurse. In little more than an hour I had the satisfaction to witness the beneficial effects of the above treatment; her sensibility to external impressions gradually returned, and her pulse rose to nearly 100. The thirst now became very urgent, and she was allowed to drink cold water in small quantities at a time, which she preferred to the coffee at first ordered. I now omitted all stimuli, and as she had no evacuation from the bowels since my arrival, I prescribed calomel, iij. grains, to be followed in half an hour by iij. drachms of castor oil. Three hours after the administration of the medicine, the bowels had not acted, nor had she voided any urine; I then ordered the calomel and castor oil to be repeated, and to have a common enema with spirit of turpentine, two drachms, which soon came away without any admixture of feculent matter. In the course of three hours the bowels acted partially, the stools were scanty and clay-coloured, being remarkably devoid of bile, nor did they assume a natural colour until next day, after several doses of calomel had been given. It is worthy of remark, that although the evacuations were carefully examined, the seeds of one berry only were found subsequent to the development of the narcotic symptoms.

"On reviewing the above cases it appears that the primary effects of the fruit of the *D. mezereon* on the human subject, are that of a powerful local irritant, causing vomiting and hypercatharsis, and that it only operated as such in the two younger children: its secondary effect seems to be that of a powerful narcotic, for we have the elder child, though similarly vomited and purged with the others, labouring under all the symptoms of poisoning: the narcotic principle of the fruit having been absorbed and carried into the circulation, and had it not been for the opportune application of stimulants she must inevitably have sunk under its influence."

59. *Experiments on the effects of the Hydrated Peroxide of Iron as an antidote to Arsenious Acid.* By Dr. Von Speez, Professor of Chemistry in the Theresian Academy of Vienna.—In the year 1831, as our readers are aware, Dr. R. W. Bunsen and Dr. A. A. Berthold published a small work at Göttingen, on the use of hydrated peroxide of iron as an antidote to arsenic, in which they claimed for this remedy all the properties of a true specific. With the view of testing the accuracy of their results, Dr. Von Speez prepared a large quantity of the hydrated peroxide of iron, and instituted a series of experiments with it, on animals.

Experiment 1. On the 5th of October, 1834, at ten o'clock in the forenoon, twelve grains of white arsenic, mixed with a portion of boiled meat, was administered to a cat six months old. At twelve, retching and vomiting commenced. An attempt was made to administer the antidote mixed with water, by means of a tin funnel, but the animal was so extremely restive, that no more than a drachm of the hydrated peroxide could be given. Death occurred about one o'clock.

Experiment 2. On the 15th of June, 1835, at ten o'clock in the forenoon, a scruple of the white oxide of arsenic was given in some sausage to a dog six months old. Half an hour afterwards, Dr. Von Speez attempted to introduce the antidote, by means of a syringe furnished with an elastic tube. The dog, however, bit the tube, and was otherwise so unmanageable, that scarcely any could be administered. He died at half-past twelve.

Dr. Von Speez finding that the hydrated peroxyde of iron could not be given in a sufficient dose in this way, made the following change in the mode of exhibition.

Experiment 3. On the 28th of October, 1835, at ten o'clock in the forenoon, a drachm of finely powdered arsenic was administered to a mastiff six months old, which had been sparingly fed the day before. About five minutes afterwards, an ounce of the dry hydrated peroxyde of iron, finely powdered, and mixed with a sufficient quantity of fried liver pudding, was laid before him. He ate the whole, and afterwards drank about three ounces of milk. About eleven o'clock, he had some fluid evacuations from the bowels, but still appeared lively. About three o'clock p. m. he looked dejected, went to his bed, and lay there quietly; during the night he had five fluid evacuations. On the 29th, he looked dejected, did not stir from his bed, and neither ate nor drank. On the 30th he ate a little meat, drank about six ounces of milk, and returned to his bed. On the morning of the 1st of November, he was quite lively, and ate every thing that was offered to him.

Experiment 4. On the 10th of December, 1835, at ten o'clock in the forenoon, a drachm of finely powdered arsenic was given in some pudding to a bitch, twelve months old. Five minutes afterwards, an ounce of the antidote was given, mixed with liver pudding, the whole of which was devoured by the animal. At eleven o'clock she went to her bed, appeared shy and timid, and refused to eat. She remained quietly in her bed the whole night, without vomiting or purging. On the morning of the 11th she had three fluid evacuations from the bowels, and did not appear to be ill; on the 12th she was running about as usual.

The foregoing mode of exhibiting the antidote to animals may be employed until vomiting commences; after this occurrence, it must be administered by means of a syringe.

As one-sixth of the quantity of arsenic administered in Experiments 3 and 4, is more than sufficient to kill a dog, Dr. Von Speez looks upon the hydrated peroxide of iron as a true specific, and thinks that its failure in any given case is to be attributed to its being employed too late, or given in too small a quantity. In order to ensure the giving of a sufficient dose, ten times the quantity of hydrated peroxide of iron must be administered; but a much larger quantity may be safely given, as this remedy does not exercise any deleterious effect on the animal economy. In order to obtain the remedy in a state of purity, and free from any admixture of copper, he recommends the precipitation of the iron by ammonia, and states that this preparation when properly made, and preserved in bottles with good glass stoppers, will retain its virtues for a very considerable time. The following is the mode of exhibition which he recommends in cases of poisoning by arsenic.—℞. Olei Amygdal. dulcis, Pulv. Gummi Arabici, Pulv. Sacchari Albi aa ʒij. tere simul et affunde, sensim terendo, Aquæ destillatæ ʒxv.; Hydratis Ferri ʒij; of this mixture, previously well shaken, a dessert-spoonful is to be given every three minutes.

Dr. Von Speez resumed his investigations the following year, but instead of the pure hydrated peroxyde, he employed substances in which it is known to exist in considerable quantity, and which require no previous preparation, namely, rust of iron, and hematite (red iron ore).

Experiment 1. On the 16th of January, 1836, at ten o'clock in the forenoon, a drachm of finely pulverized arsenic, mixed with about an ounce of fried liver pudding, was given to a dog twelve months old. Immediately afterwards, a mixture of two ounces of hematite with seven ounces of liver pudding was offered to him, the whole of which he devoured, and then drank a small quantity of milk. Forty minutes afterwards, he was attacked with violent retching; the anterior extremities were extended spasmodically forwards, and the posterior drawn backwards, as is usual in cases of poisoning from arsenic; he also had severe vomiting, and convulsive spasms of the abdominal muscles. At eleven o'clock he went to his bed and was peevish; the retching continued during the afternoon, and he had five dark-coloured evacuations from the bowels. On the 17th of January, he remained the whole day in his bed, refused to eat or drink, and had six dark-coloured evacuations. On the 18th he appeared quite lively, sprang to meet the servant, and ate and drank with much desire.

Experiment 2. On the 19th of March, 1836, at eleven o'clock in the forenoon,

a drachm of finely powdered arsenic, mixed with three-quarters of an ounce of liver pudding, was given to a dog four months old, and immediately afterwards an ounce and a half of rust of iron mixed with six ounces of liver pudding. The animal ate only three-fourths of the antidote, and then drank a small quantity of milk. At half-past eleven he vomited, but still appeared lively; at one o'clock he had a green evacuation from the bowels. During the afternoon he had five alvine evacuations and frequent retching, but no vomiting. In the evening he went to his bed, and remained there quietly during the night; on the morning of the 20th, he had several dark-brown fluid evacuations, but was in other respects lively, had a good appetite, ate bread, and did not exhibit the slightest trace of illness.

Experiment 3. On the 19th of March, 1836, at two o'clock in the afternoon, a drachm of finely powdered arsenic, which had been previously dissolved in two ounces of hot water, was poured down the throat of a dog four months old, while the solution was still warm, by means of a tin funnel, and about ten minutes afterwards, an ounce and a half of rust of iron, mixed with a quantity of milk, was administered in the same way. Five minutes afterwards, the dog was attacked with convulsions and retching, and dropt down as if dead. After fifteen minutes he got up, crawled into a corner, and vomited violently. During the night he had several dark-coloured alvine evacuations. On the 20th he was sullen, and refused to eat; on the 21st he was fresh and lively, and greedily ate some bread offered to him.

Experiment 4. On the 21th of March, 1836, at nine o'clock in the forenoon, a drachm of arsenic, mixed with an ounce of liver pudding, was given to a dog four months old, and then an ounce and a half of hæmatite, mixed with five ounces of liver pudding; the animal devoured the whole. Forty minutes afterwards, he was attacked with retching and convulsions, followed by severe vomiting; as soon as the retching ceased, he ate up again what had been ejected from the stomach. At twelve o'clock he began to vomit again, became dejected, and went to his bed; he whined, retched continually, and his jaws were covered with a whitish foam. During the afternoon he had several alvine evacuations of a reddish colour, trembled, and was affected with constant retching and convulsive twitches. In the evening he was more tranquil. On the 25th he was quite lively, sprang to meet us, and ate with a good appetite.

Experiment 5. On the 21th of March, 1836, at eleven o'clock in the forenoon, a drachm of finely pulverized arsenic, mixed with an ounce of liver pudding, was given to a dog three months old, and immediately afterwards an ounce and a half of lapis hæmatites mixed with five ounces of liver pudding; the animal consumed only two-thirds of the antidote. Twenty minutes afterwards he began to vomit, and at the same time had an evacuation from the bowels; he was then attacked with retching, vomiting, and convulsions, which lasted until one o'clock; during this time he vomited six times. At two o'clock he became dejected, shivered, and sought his bed; the retching was extremely severe, and his jaws were covered with foam. These symptoms disappeared about eight o'clock in the evening. On the 25th, he remained in his bed; about ten o'clock in the forenoon, he vomited twice a white frothy fluid; at eleven, he had some fluid evacuations from the bowels. On the 26th, he had several greenish-brown evacuations, but appeared lively and ate with appetite.

From these experiments Dr. Von Speez is led to conclude, that rust of iron and hæmatite, although they do not prevent all the bad effects of arsenic on the system, may, in defect of the hydrated peroxyde of iron, be employed as antidotes to that poison. To the hydrated peroxyde, which is capable of neutralizing all the deleterious properties of the poison, he assigns the first rank as an antidote to arsenious acid, next to this stands rust of iron, and then, *sed longo intervallo*, hæmatite, which in consequence of its slow operation, may be used without any beneficial result where the poison is exercising a very powerful action on the system. Experiments 1, 4, and 5, of the second series, shew distinctly the predominant influence of arsenic on the system, although the hæmatite was administered immediately after the poison, and before its specific effects could be produced. The animals, it is true, did not die, but the counteracting powers of the antidote were not manifested until nearly three hours after its exhibition. These objections do not apply with any thing like the same force to rust of iron, which Dr.

Von Speez thinks may be advantageously employed as an antidote in defect of the hydrated peroxyde. Its great efficacy as an antidote is shewn in Experiments 2 and 3 of the second series. The remarkable effects of the arsenic in Experiment 3 are to be attributed to the mode of administration, for Dr. Von Speez has repeatedly found that the poison operates much more rapidly when introduced into the stomach in a state of solution. A drachm of arsenic in powder does not produce its deadly effects on the system in less than six or eight hours, while the same quantity dissolved in warm water destroys life in a much shorter time. Rust of iron has also the additional advantage, that it can always be procured with facility.—*Brit. and For. Med. Review*, from *Med. Jahrbücher des k. k. O. St. xix Band. 4 Stück. xx Band. 1 Stück. 1836.*

60. *On the effects of black oxide of manganese when inhaled into the lungs.*—So little is known respecting the action of manganese on the animal body, that the following observations by Dr. JOHN COOPER, Regius Professor of Materia Medica in the University of Glasgow, are particularly interesting.

"In the chemical works of Charles Tennant and Co., a considerable number of men are employed in grinding the black oxide of manganese, to be employed in the manufacture of bleaching powder. The surface of their bodies is of course constantly covered with the manganese; the air which they breathe is loaded with it in the form of fine powder, and they are ever exposed, from neglect of cleanliness, to swallow portions of it along with their food. In 1828, a previously healthy young man engaged in this occupation was observed to exhibit symptoms of paraplegia. The loss of power in the lower limbs was at first so slight, that, though perceptible to the bystanders, it was scarcely observed, and never made the subject of complaint by the man himself; but it slowly increased, till at the end of some months he was forced to quit his work. After trying the remedies usually employed in such cases without effect, he removed to a distant part of the country, where, at the end of a year, he had, according to report, made little or no progress towards recovery.

"In the following year, another workman, also employed in grinding manganese, and previously enjoying good health, was similarly effected. No suspicion being entertained that the manganese could operate as a poison, this person was permitted to continue his employment, which he did for many months, with the exception of some intervals employed in medical treatment. The paralytic affection increasing, and the former case being recollected, the manganese was at length suspected as the cause. The workman was removed to another department, and from that time there was no further increase of the symptoms. At present, after a lapse of seven years, only a very trifling amendment has taken place in the condition of this person. The loss of power is most apparent in the lower extremities, which are so considerably affected that the patient staggers, and inclines to run forward when he attempts to walk. The arms are also weakened, but only to a small extent. The patient complains that in speaking he cannot make himself heard by persons at a moderate distance, as formerly; and the inability seems to depend, not on any defect in articulation, but on weakness of voice. There is no deficiency of sensibility in any part of the body: the intellect and external senses are unimpaired; but there is an obvious expression of vacancy in the countenance, apparently from the paralysed state of the muscles of the face. From the same cause the saliva is apt to escape from the mouth, especially during speaking. There is no tremor of any part of the body—no colic—no constipation, nor other derangement of the digestive function. The remedies which were tried in this case were mercury, the warm bath, blisters to the head and spine, and strychnine; but none of them produced any effect upon the disease.

"Since the occurrence of these cases, three other workmen employed in grinding manganese have been similarly affected; but in them the disease was arrested by removing the cause. As soon as the staggering, which is the first symptom of the disease, was remarked, their employment was changed. In all of them the paralysis gradually diminished, and at the end of a few weeks was entirely gone.

"These cases seem to show in a satisfactory manner, not only that manganese is an active poison to the human subject, but also that its effects, when it is slowly introduced into the system, resemble those of mercury and of lead, when simi-

larly applied. Like those two metals, it paralyses the motor nerves; but from the former it differs, in as far as it first affects those of the lower extremities, and does not occasion tremors of the affected part: whereas, in the case of mercury, the paralysis commences in, and is usually almost entirely confined to the arms, and accompanied by the *tremblement métallique*. From lead, again, manganese is distinguished by its producing no effect upon the intestinal canal analogous to lead colic, or to the constipation occasioned by the action of that metal.

These cases also show that the disease produced by manganese, like other varieties of metallic paralysis, is, when fully developed, a very permanent and intractable affection; and that, therefore, the attention of medical practitioners, and of persons who have occasion to use manganese in large quantities, should be directed chiefly to the necessity of arresting the progress of the disease, by removing its cause as soon as the first symptoms make their appearance. When this is promptly done, the three cases last noticed show that a speedy restoration of health may be expected.

It is almost unnecessary to remark, that the black oxide of manganese used in the arts, contains no metallic impurity except a little iron. The poisonous action therefore, must be attributed to the manganese itself.—*Brit. An. Med. Jan. 13, 1837.*

61. *Influence of opium eating on health and longevity.* By G. G. SIGMOND.—A very interesting question has arisen upon the effects of opium-eating on health and on longevity. The late Earl of Mar had insured his life in one of the offices in Edinburgh to a large amount. He was an opium consumer to the amount of from two to three ounces of laudanum daily, but this fact had not been stated at the time the policy of insurance was granted, and on his death, which occurred two years afterwards, from icterus and ascites, the company declined payment of the policy, assigning as the reason, that his lordship had concealed from them a habit which tends to shorten life. The bank that held the policy as security for money lent entered upon an action, and the consequence was that the insurance-office was adjudged to pay the amount, not, however, on the ground that the habit was injurious to life, but upon the ground that the office had not shown the proper degree of caution when the insurance was effected. Dr. Christison was a medical witness on that occasion, and his attention was necessarily directed to the subject, which led him to an inquiry, and from eleven cases which came under his notice, he considers that the practice of opium-eating is not so injurious as is commonly believed.—this, however, is not the general idea. Mr. Madden, whom I have just quoted as an authority to be relied on, says, that from personal inquiries he found it was rare for an opium-eater at Constantinople, if he began the practice early, to pass thirty years of age.

62. *What is the smallest quantity of opium that will prove fatal?* This, says Dr. SIGMOND, is a question of no small importance, and one which has not been altogether satisfactorily answered. It has been said, four grains of solid opium; and the best authenticated case is one which will be found in the admirable work on poisons, by Dr. Christison: it was related to him by Dr. W. Brown. A dose of four grains and a half killed an adult,—it was combined with nine grains of camphor. The man took the opium at seven in the morning for a cough, at nine his wife found him in a deep sleep, from which she could not arouse him. Nothing was done for his relief till three in the afternoon, when Dr. Brown was called to him, and found him labouring under all the usual symptoms of poisoning by opium, contracted pupils amongst the rest. Death ensued in an hour, notwithstanding the active employment of remedies. A case of fatal narcotism has lately excited a good deal of attention amongst the medical men in Paris. It was produced by twelve drops of laudanum, used as a lavement, for a patient under the care of M. Rayer, in the Hôpital de la Charité, and death occurred in eighteen hours. It has been said by Orfila, in his *Toxicologie Générale*, that opium acts more energetically when introduced into the rectum than when administered by the stomach, but certainly such a result from so minute a quantity could never have been foreseen. Dr. Christison states, that he has given, by injection, without producing more than the usual somnolency, two drachms, by measure, of laudanum. In examining the details of cases, and more particularly in looking through the vast number that medical men have very judiciously sent to the periodical medical

journals, I am quite astonished at the largeness of the doses that have been taken by suicides, and yet with proper care they have recovered from their poisonous effects. In one of the German journals there is a female described as recovering after having swallowed no less a quantity than eight ounces of crude opium. It seems to me, however, that the poison taken in tincture proves fatal in much smaller doses than in the solid form, and this is probably to be accounted for by the length of time which the stomach must take to dissolve a large mass, and in the interim some of the symptoms which excite alarm are perceptible, and remedial agents are employed; but where the tincture has been taken the peculiar sopor may supervene within twenty minutes. Much, too, will always depend on the fulness or emptiness of the stomach; thus, opium taken fasting in the morning, will produce its effects much more rapidly and certainly than at any other time in the day; and after a meal it is very likely to be vomited back. I think, from all that I have been able to collect, that I should draw the conclusion, that two drachms of tincture of opium might, under some circumstances, act as a destroyer of life tolerably quickly; still, however, I should well weigh all the circumstances before I should believe such a dose of properly-formed tincture to have proved fatal. About six grains of solid opium could not be taken with impunity by those unaccustomed to it.

CHEMISTRY AND PHARMACY.

63. *New method of preparing Copaiva for administration.*—Pharmaceutists have long sought for some means of administering copaiva, by which its nauseous taste and disagreeable odour should be overcome without its remedial powers being destroyed. M. Mothe has attained this object by enclosing the balsam in ovate capsules of gelatin. M. Raquin, pharmacist at Chancery, has communicated to the Academy of Medicine of France, a method devised by himself, which appears to be an improvement on that of Mothe. Instead of employing the liquid copaiva like the latter, M. R. thickens it with magnesia. If a sufficient time be allowed, six months or more, he asserts that a thirty-second part of magnesia will render the copaiva sufficiently consistent. The mass thus made is formed into ovate pills and then covered with a very thin covering of pure gluten. N. Guillerier has employed the preparation in more than a hundred cases, and is convinced of its efficacy. This preparation has the advantage over that of Mothe, in containing more copaiva in the same bulk, the capsules of Mothe never being full, and the envelope being thicker. The gelatinous capsule weighing eighteen grains contains only ten grains of copaiva. The glutinous capsule weighing eighteen and a half grains contains sixteen grains of copaiva, magnesia three-quarters of a grain, and the envelope a grain and three-quarters. Thin as is the glutinous envelope it is completely impermeable, and remains so for an indefinite period; the gelatinous capsules, on the contrary, allow the copaiva frequently to transude after some time.

The committee of the Academy to whom the memoir of M. Raquin was referred, have made a report highly favourable to the invention of this pharmacist. The committee have satisfied themselves that these capsules are perfectly dissolved in the stomach.—*Bull. Gen. de Thérapeutique*, Aug. 15, 1837, and *La Presse Médicale*, July 1, 1837.

64. *Discovery of Iodine in Cod-fish Oil.*—Dr. Kopp suspecting from the analogous therapeutic effects of iodine and the oil of the liver of cod-fish, the presence of the former in the latter substance, requested Mr. HOPPER to analyse the latter. This he has done, and the result is completely confirmatory of the suspicions of Dr. Kopp.—*Hufeland and Osann's Journal*, 1836.

65. *Test of Morphia.*—M. LAFARGE, in a communication to the French Academy, states that the most invariable and delicate test of the treatment of morphia is to be found in inoculation. He has tried infusions of several of the species of poppy which contain that principle, and of their congeners which do

not, and he finds invariably that a small quantity introduced under the skin, as in vaccination, is followed by the development of a papula of determinate character.

MEDICAL STATISTICS.

66. *Louis on the application of Statistics to Medicine.*—In our last number we mentioned that the Academy of Medicine of France had been engaged in the discussion of this question, and gave the speech of M. Double. We now insert the remarks of M. Louis in reply, that our readers may be in possession of the arguments on both sides. Though this discussion has not resulted in fixing the limits of the applicability of statistics to medicine, still much light has been thrown on the subject. Its utility, in some cases, has been clearly demonstrated, as must be admitted by its warmest opponents, whilst its advocates seem to have abated much of their original pretensions.

"The object of medical statistics is the most rigorous determination which is possible of general facts, which, in my opinion, cannot be arrived at without their assistance. Thus a therapeutic agent cannot be employed with any discrimination or probability of success in a given case, unless its general efficacy, in analogous cases, has been previously ascertained; therefore I conceive that without the aid of statistics nothing like real medical science is possible.

"Medical statistics have been attacked in their application to therapeutics, to normal and pathological anatomy, and to pathology. We must therefore look on them in all these different points of view: and first with reference to pathology. But before proceeding, let me remind you that medicine is a science of observation, and that I seek for truth in facts.

"Supposing, then, that you wish to study the symptoms of a disease, you can only do so by carefully collecting a sufficient number of facts: and as you do not always observe the same symptoms in the same disease, you will have to remark the relative frequency of their occurrence in particular cases,—that is, you must begin to count.

"It must of course be admitted that symptoms vary according to an infinity of circumstances; yet, to ascertain that these variations take place, and in what they consist, you must count how often each symptom shows itself, in a certain number of cases, under certain circumstances. The more deeply you study a symptom, the more you must count. If you say such a symptom occurs often, or it occurs seldom, you mean that you have seen it five, or twenty, or a hundred times. If you consider the number of cases from which you have to form your judgment not numerous enough to lead to any definite result, you may perhaps look on these results as provisional, until you can employ a more extensive induction. But how many particulars will be necessary to arrive at one general definite result? Reason can give no answer, but experience shows that an indefinite number is not required. Thus six hundred cases have been sufficient to settle definitely the influence of ease on longevity.

"Inquiring myself into the effect of sex on the development of phthisis, I obtained a result, which was soon confirmed by M. Benoiston, working on facts of a similar kind, but much more numerous. I might cite many other instances: but to continue.

"Suppose that you wished to ascertain the duration of a symptom, would you select a few cases out of a number, and judge by them? On the contrary, to obtain your object, you would evidently have to ascertain the mean duration of the symptom in all your cases, next mark those above and below the mean, and then the extreme limits of its duration: and because the duration may vary according to age and sex, you must further arrange these facts in groups,—no doubt a troublesome labour, but a necessary one. And if, after observing a great variation in the frequency and the duration of symptoms, you wished to find out its cause, you could not, without having your cases carefully arranged and classified in this way.

"It may perhaps be said, that physicians have in all times paid attention to the duration of diseases. They certainly have done so: but they have only said, in a general way, that diseases vary according to a number of causes, are longer or

shorter, &c. What I have just said applies to diseases which necessarily terminate in death, or in a return to health. All that writers before our times have told us, that such and such diseases are more or less often fatal; but such rough guesses or statements are of no value, and daily experience shows that they deserve no confidence.

"If, then, mortality, taken in general, can only be ascertained by calculation, how can the variations of mortality, according to age, sex, and strength, be known, without the aid of numerical analysis?—how can we investigate the frequency of sporadic diseases, the predisposing and the exciting causes of disease, without having recourse to numbers?

"If we should study two or three particular cases as types, as M. Dubois recommends, we could only arrive at conjectures about the cases under consideration,—we could not satisfy ourselves whether the circumstances preceding the disease were simple coincidences or were causes. But supposing that we did arrive at just conclusions from a few cases, yet they would be confined to these cases, and have no general value. Thus, if, after examining a certain number of cases in different points of view, one circumstance presented itself only six times in the hundred, its importance might be doubted, and it might be looked on as merely a coincidence; but if it presented itself twenty-five times in the same number, its value would be very different. And in this way, in the case supposed by M. Double of bad news being brought to a thousand women in childbed, the physician will not conclude that he may announce bad news to women under such circumstances without any danger: he will only learn that the action of such a case is not likely to be dangerous, which he could only know by the numerical method.

"Undoubtedly, by studying numerically the different causes influencing disease, we cannot arrive at any positive result, but we may avoid errors otherwise inevitable. Phthisis is a good instance of this. Supposing, what I am not at all sure of, that phthisis is sometimes the result of the inflammation of the tissues composing the lungs, how can we believe that this is the sole, or even a common cause, when we know that phthisis is more common in women than in men, and that the reverse is the case with regard to pncumony and pulmonary catarrh; that tubercles are not more common in the case of dilatation with redness and thickening of the bronchi than in subjects labouring under disease foreign to the lungs, other circumstances being the same,—not more frequent in those who sink under chronic gangrene of the lungs than in those who die of a different disorder quite independent of the lungs.

"Thus, if we wish to study deeply the symptoms, to know the progress and duration of maladies, their relative frequency and their causes, counting is indispensable; for without it no precise result can be obtained.

"Numerous exact and carefully analysed observations have shown, that after the age of fifteen there can be no tubercles in any organ without their existing in the lungs. No less exact observations have shown, that one form of chronic peritonitis is tubercular from its origin. When, then, chronic peritonitis exists, we may conclude that the lungs are tubercular, even though auscultation and percussion afford no signs; and this I have on actual examination repeatedly found to be the case. This is a pretty conclusive argument against those who think that physicians, when they use numerical analysis, throw aside induction entirely.

"If, again, after studying the symptoms and the duration of a disease whose termination is sometimes fatal, you wish to ascertain its seat, and whether there did not co-exist with the primary lesion other lesions peculiar to it, we must begin anew to count: you will have to learn, by an appeal to facts, what is the primary lesion, and then what are the secondary ones, and the circumstances attending them.

"But the primary lesion itself may vary much, according to the different periods of life; and here again you must classify your cases, and appeal to numbers. M. Dubois (d'Amiens,) however, will advise you to be satisfied with approximative calculations; but see their result. According to Corvisart, dilatation with thinning of the walls of the heart is common; but on opening his book, and counting, only one case is found. The same statement is made by Bertin and Bouillaud, in their works; yet in forty-five cases of heart disease observed by me at

La Charité during eight years, no instance of it was seen. In the same way, the general statements of Laennec as to ulcerations of the trachea being common in phthisis, but uncommon in those who have not tubercles, are found, on numerical analysis, to be exactly the reverse of the fact. The more gross such blunders are, the more clearly do they show the uselessness of mere approximative results.

"Thus the errors produced by the neglect of numerical statistics are shown with regard to pathological anatomy, as well as to pathology itself.

"If I am to allude to the case of typhoid fevers, the reason why their nature has not been understood till modern times is, not only that post-mortem examinations used to be neglected, but also that the knowledge of their symptoms and lesions had been trusted to memory, and numerical analysis not been employed; but since facts have been accurately observed, it has been ascertained that typhoid fever is a distinct affection, confined to youth, and not a complication of other diseases. How the ancient doctrine of its being a complication of other diseases should have been supported by M. Double, excites my astonishment.

"As to normal anatomy, it was not at first necessary to apply reckoning to the deviations from it; but now, every surgeon knows the importance of being aware of the variations in the distribution of the arteries. And how can the knowledge of these aberrations be obtained without the aid of statistics? At first it was impossible to distinguish a heart which was hypertrophied, or merely dilated, from one in its healthy condition. But after Bizot had carefully examined the hearts of a great many individuals of different sexes and ages, who died with healthy hearts, he was enabled to ascertain its normal condition, and to give a healthy standard by which to judge of its aberrations. Thus the results derived from the numerical method in pathology and in normal and pathological anatomy, are not of imaginary, but of really practical value.

"I come now to therapeutics, and suppose that you have some doubt as to the efficacy of a particular remedy: how are you to proceed? Will you compare two cases in which the remedy has been employed, with two similar ones in which it has not? Surely not; for you know that the inference drawn from them would be of no general value. You would take as many cases as possible, of as similar a description as you could find, and would count how many recovered under one mode of treatment, and how many under another; in how short a time they did so; and if the cases were in all respects alike, except in the treatment, you would have some confidence in your conclusions; and if you were fortunate enough to have a sufficient number of facts from which to deduce any general law, it would lead to your employment in practice of the method which you had seen oftenest successful.

"The state of the question, then, is this: every one has recourse to counting, but some approximatively, and others exactly. How, then, can it be said that a general approximative, *i. e.* imaginary mode of reckoning, is preferable to an exact, *i. e.* a real one. The first, which is merely the impression retained by the memory, is quite uncertain; while the other, resting on actual facts, is sure, and deserving of confidence.

"As to the argument that it is very difficult to combine many similar facts, so as to draw from them conclusions applicable to particular ones, I have shewn that this difficulty is quite as great in the case of those who do not adopt numerical analysis, and that it is one of the circumstances which render it necessary. I may add, that the difficulty is greatly exaggerated by those who talk theoretically on the subject, because the laws discovered by the numerical method, in every department of medicine, are every day confirmed by observation.

"Those who argue against statistics talk a good deal of their study of medical literature; but what is the use of it if it cannot lead to any general views of treatment? or what is the use of writing, if we can only state particular cases, without drawing any general inferences, or making any advantageous use of the past?

"It must be admitted, as M. Double remarked, that the general didactic works which are in the hands of young medical men are of little use in practice; but this is attributable to the faultiness of the works themselves; and if you examine the works of D'Espine, or of Maunoir, where the numerical method has been employed, you will soon discover their superior excellence.

"It has been said that I refused to rest the argument on the case of typhoid fever, but I only remarked, that, without the aid of numerical analysis, it is impossible

to lay down any absolute mode of treatment; and when it was said that two patients having the same disease could not be treated in the same way, I merely referred to the case of intermittents, dysentery, and painters' colic, where the same treatment is almost universally successful.

"Again, it has been said that as facts are so variable, we must always be guided at the bed-side by indications. But these indications can only be understood by experience—that is, by the analysis of facts previously observed. It was from a perception of its usefulness, not from any wish to assimilate medicine to the other sciences, that I adopted the numerical method; and in fact, without it, I could have turned to no practical use the numerous facts which I had collected on the subject of phthisis.

"I wonder that our adversaries, who impugn the value of medical statistics, have not questioned the importance or truth of the results to which they have conducted; and, until they have done so, the advocates of the numerical method may fairly consider themselves in the right.

"I have had to prove the value of numerical analysis applied to medicine; I think that I have demonstrated by facts its indispensable necessity; and I end by remarking, that numerical analysis, which is of no use without numerous and well-observed facts, must, in its turn, have great influence in rendering perfect the observation of facts. For when we are at the trouble of analysing, to draw rigorous conclusions from facts, exactness is essential. This, I think, will be denied by no one.

"To conclude, if any thing has astonished me in these debates, it is to see the partisans of statistics accused of confining themselves to ciphers, and of reducing medicine to simple addition, when they have applied all their power of study and reflection to the details of facts."

67. *Mortality of Illegitimate Children.*—It is stated in a recent work by the Abbé GAILLARD, entitled "*Recherches administratives, statistiques et morales sur les enfants trouvés, les enfants naturels et les orphelins en France et dans plusieurs autres pays de l'Europe,*" that in 1789 the mortality in illegitimate children was 98 per cent. from birth to the age of four years; i. e. of 100 illegitimate children born at that period in Paris, 2 only lived to the age of four years!

MISCELLANEOUS.

68. *French Medical Literature.*—There were published in France in 1836, more than three hundred volumes, on the different branches of the medical sciences. These added to the pamphlets, memoirs, and other small publications form a total of more than a hundred and fifteen thousand pages. Adding to these the journals and theses published during the year, and we have a total of a hundred and eighty thousand pages. This would give five hundred pages a day to be read by one who would peruse what is published in France alone on medical subjects. If to this be added what is published in Germany, Great Britain, and this country, it will be seen how impossible it would be to keep pace with the progress of our science without some plan of condensing, such as is adopted in the periscope of this Journal.

69. *Cholera in London.*—We find it stated in the London Medical Gazette that considerable alarm was excited in London in the early part of last November, by the occurrence of some well marked cases of cholera on board the Dreadnaught, and in some other situations; but the disease has shown no decided tendency to assume an epidemic character. The editor of the Gazette adds, that this is nothing beyond what has been witnessed every autumn since the first irruption of the disease in England.

AMERICAN INTELLIGENCE.

Hepatic abscess communicating with abscess in right Lung—death—autopsy. By WILLIAM PEPPER, M. D., of Philadelphia.—Mr. W. at. 23, had been subject to severe diarrhœa for eight weeks before he came under my notice. The diarrhœa, he stated, had been preceded by severe pain in the right hypochondriac region, and to relieve it he had been bled and blistered. He has never had bilious or intermittent fever; but had been much exposed previous to his attack, to the heat of the sun, whilst superintending a lime-kiln at Norristown.

Present condition.—October 25th, 1837. Frame large, emaciation moderate, complexion pallid, tongue clean and moist, intelligence imperfect, pulse 90 and feeble; has had from ten to fifteen feculent evacuations, without pain, in the course of twenty-four hours; appetite good; sleep tranquil; strength tolerable. Examination showed evident enlargement at the lower part of the right side of the chest; mensuration from the ensiform cartilage to the spine on the right side exceeded the left by three inches, and percussion over this region was dull, and the respiration inaudible. The margin of the liver was felt extending to within an inch and three-quarters of the ilium. He has no cough or any symptoms of disease of the lungs, skin not jaundiced, urine of natural colour. Calomel gr. ss., pulv. dover grs. iij., one powder every three hours; farinaceous diet. In this state he continued until the 28th, when his diarrhœa increased; pulse rose to 100, small and feeble; ordered ext. krameriæ and cretæ. ppt. ãã grs. v. as a substitute for calomel, and pulv. dover; also a blister to be applied over the liver; diet solely rice and milk.

October 30th. Nearly same state; diarrhœa somewhat less; blister dressed with mercurial ointment.

November 1st. Complaints of pain on slight pressure being made over the right side; evident increase of size in this part; indistinct fluctuation between the ninth and tenth ribs, has no chills or night sweats; injection of ßj. tinct. opii at bed-time.

November 3d. Diarrhœa continues; discharges of feculent matter too frequent to count. Mist. cretæ ßij., tinct. opii. ßj. ext. krameriæ 5ss., a tablespoonful every third hour; ointment discontinued.

4th. This morning early felt something rise in his throat, and immediately discharged about ßvj. of brownish inodorous pus, striped with blood; pulse 110; tongue white; since discharge has felt easier; side sensibly lessened; ordered a flaxseed poultice to the part.

5th. Slight cough, and expectoration of a reddish-brown pus, mixed with bronchial mucus, amounting to ßvj. in the twenty-four hours; respiration bronchial; voice resonant, and distinct or pitant rattle at the lower portion of the right lung; pulse 110 and more feeble. Morphiæ sulph. gr. i., muc. gum. acac. ßiv., a tablespoonful every two hours; diet mutton broth and egg.

7th. In addition to the pneumonic symptoms, distinct pectoriloquy can be heard at the lower part of the right lung. Expectoration more copious and slightly offensive; surface hot; some thirst; pulse 120; same treatment.

8th. As an abscess was evidently pointing externally between the ninth and eleventh ribs, a puncture was made with the lancet, which gave exit to at least one pint of reddish inodorous pus. The liver immediately retired behind the ribs, and the patient felt relieved. Diet increased; pulse 120 and feeble; tongue dry; diarrhœa increased; ordered tinct. krameriæ ßij., tinct. opii 5i., aque cinnam. ʒiv., a tablespoonful every second hour; port wine occasionally.

9th. Expecterated about $\frac{5}{8}$ vi. of pus, as before described; near one pint of pus has escaped from the wound; on coughing air is forced through the opening, and the cellular tissue from the ninth rib to axilla is emphysematous; amphoric resonance of voice with metallic tinkling heard behind the ninth and tenth ribs. Patient much exhausted by the discharges; diet, beef tea, and milk punch.

On the 10th, 11th, and 12th, he continued in nearly the same state, and under the same treatment, with occasional anodyne injection.

11th. Percussion over the liver tympanitic; great emaciation; pulse 120; tongue dry; sordes of teeth; copious perspiration; discharge from the opening near $\frac{3}{8}$ x.; expectoration diminished; no pain; same treatment.

16th. The discharge from his side and lungs much smaller. Increased difficulty of breathing, small slough on sacrum; sulph. quiniæ gr. i. every hour. From this time he became rapidly worse, and expired at day-light of the 18th November.

Autopsy—Eight hours after death; present Drs. Wallace and Smith. The integuments and muscles were dissected from the ribs of the right side, and the latter sawn off at their angles exposed a large abscess between the liver and ribs. This abscess was limited above by adhesions between the diaphragm and the sixth rib, and below by adhesions between the peritoneum covering the liver and the margin of the false ribs. The cavity thus formed was eight inches long, six broad and three deep; a large portion of the right lobe of the liver was destroyed, and the ninth and tenth ribs were in a state of exfoliation; on the surface of the liver the abscess was limited by a cartilaginous membrane, in some parts a quarter of an inch thick; an incision made through this membrane opened into another spherical abscess about two inches in diameter, and filled with yellow healthy pus. About one half inch of the substance of the liver intervened between the false membranes with which the two cavities were lined. The last mentioned abscess was immediately above the gall bladder, and extended to within one-fourth of an inch of the ascending vena cava. The rest of the liver was in a state of fatty degeneration. The gall bladder was filled with healthy bile. A circular ulcerated opening, about one inch in diameter, perforated the diaphragm near its adhesion to the sixth rib, and communicated with a large abscess in the lower lobe of the right lung. The pulmonary abscess was not lined with a false membrane, and was of an irregular shape: a number of large bronchial tubes terminated in it, and it was evidently of recent date. The entire lower lobe of the right lung was hepaticized, and adherent to the ribs and diaphragm. The middle and upper lobe of the right lung and the entire left lung were perfectly healthy. The mucous membrane of duodenum was slightly thickened. The lower part of the small intestine was softened and injected. A number of ulcers were found in the colon, and the mesenteric glands were somewhat enlarged; other viscera healthy.

Remarks.—This case I consider interesting from the fact of the urine, feces, and skin retaining their natural colour notwithstanding the vast disease of the liver. The tympanitic sound on percussion with metallic tinkling and amphoric resonance of voice (behind the ninth and tenth ribs,) were evidently heard below the diaphragm, and were, doubtless, owing to the free communication between the lung and hepatic abscess. In this respect I believe the case to be perfectly unique.

Case of Laceration of Ileum from external injury. By SAMUEL ANNAN, M. D., of Baltimore.—A gentleman about to mount his horse, was struck on the right side of the hypogastric region by the hind foot of the animal thrown forwards and outwards to dislodge the flies. Severe pain and sickness of stomach immediately followed, with paleness and tendency to syncope. When I saw him

an hour or more afterwards, there was not the slightest appearance of injury on the surface of the abdomen; but he complained of great pain, increased on pressure, and evidently referrible to the contained viscera. The face was pale, and the countenance extremely anxious; pulse very small and frequent. He was bled, a blister applied, emollient enemata administered, and such further treatment adopted as the symptoms appeared to us to require. Death, however, took place sixteen hours after the reception of the injury. On examination the skin and muscles gave no evidence of having been struck, but there was a laceration of the ileum. An opening was made into this intestine about one-third of an inch in diameter, through which the contents of the bowels had escaped into the cavity of the peritoneum, and produced intense inflammation, extending over nearly the whole of the viscera.

Case of Monstrosity. By THOMAS CURRELL, M. D., of Hilton Head, S. C.—In No. XXXVII. of this Journal, a case of monstrosity is related, in which the viscera of the abdomen were covered by a thin membrane only, which was ruptured previously to the birth of the child. The following case, which closely resembles the one just referred to, will probably be sufficiently interesting for publication.

The subject of it was a male (negro) child, whom I was requested to examine, February 15, 1836. It was somewhat less than the ordinary size; countenance natural; respiration somewhat accelerated; deglutition good; nursed well. Superior and inferior extremities normal; so also were the head and thorax. The abdomen, from the ensiform cartilage to the symphysis pubis, and from the linea semilunaris on each side, was entirely unprotected, except by a very thin membrane, which was so perfectly transparent that the convolutions of the intestines could be distinctly seen. The intestines presented a dark-red appearance, apparently from an injected state of their blood-vessels. In the hypochondriac region the liver could be distinctly seen; it was very much enlarged, and of a dark colour. The umbilical cord was perfectly natural, and passed out of the abdomen at the usual place. The contents of the abdomen thus protected, protruded very much anteriorly.

I directed ol. ricin. ʒj. to be given to remove the meconium, and a swathe to be passed around the body to support the contents of the abdomen.

I saw this child again on the 17th inst. Respiration and circulation were then greatly accelerated; deglutition unimpaired; continued to be nursed; medicine had procured several evacuations. This child died the next morning.

Autopsy.—The membrane already described being removed, the intestines presented unequivocal signs of inflammation. They were distended by flatus, relative position natural; liver very much enlarged and engorged; bladder empty. I examined carefully all the other organs of the abdomen and those of the thorax, but discovered nothing preternatural in their structure or relative situation.

Case of retention of Dead Fetus in Utero. By JOHN ANDREWS, M. D., of Steubenville, Ohio.—The following case of retention of a dead fetus in utero came under my observation in the early part of my practice, and I give it to you as inserted in my case book at the time.

Aug. 3, 1829. I was requested to visit Mrs. Fisher on account of a strange appearance. She was found quite easy, but stated that she had had severe bearing pains through last night; that she had been subject to "attacks" of this kind often within the last year; that this morning she had been placed over a vapour bath, with the view of producing a discharge, which it generally did, of a black fluid, more than natural, (comparing it, as I suppose, with the usual quantity of her menstrual discharge,) which always afforded her relief. After getting into bed she felt a few severe pains, by which a large 'mass of flesh' was discharged, which I was requested to examine. I found it about six inches

in length, two and a half in breadth, and completely flattened, as if it had been subject to continued and considerable pressure. It had the appearance of a whitened, or blanched, fibrous tissue, and was perfectly free from putrefaction. I was at first doubting what it was, but soon detected small cranial bones, then the extremities, &c. of a fœtus, all enveloped in the membranes. The placenta was attached, and was a little bloody on a part of its surface.

The patient stated that she had borne several children, but none living for the last six years, during which time she had had two or three abortions. That in February, 1828, she was satisfied that she was again pregnant; that the womb enlarged so as to be felt above the pubis; that it then ceased to enlarge, and continued stationary; that about this time she had an attack of flooding; after which she continued pretty well until the ensuing fall, and at about the expiration of nine months, according to her reckoning, labour pains came on and continued for some time, but *left her undelivered*; that in a few days the breasts enlarged, and milk was secreted freely, but soon disappeared. From that time to the present—*about eighteen months from her first conviction of pregnancy*, or at the expiration of a *second term*—she has laboured under irregular efforts at menstruation, (as was supposed,) always followed by some discharge, which was often copious, black, and unnatural. But she had given up all concern about her situation, and was now much surprised at this occurrence. I may remark, that I have seen her often since, and that her conviction is unmoved and immovable that she carried the fœtus to the end of a second term of pregnancy. She has had no children since the occurrence took place, nor has she been troubled with the attacks of painful uterine action.

Cephalic bellows-sound, or cerebral murmur.—In our number for November, 1833, p. 289, et seq., will be found the announcement of a discovery, by Dr. JOHN D. FISHER, of Boston, of a new auscultic phenomenon observed in the head, which he termed the cephalic bellows-sound. The paper containing an account of this discovery was first published in the Medical Magazine for September, 1833, and was read before the Boston Society for Medical Improvement several weeks previously. This paper has been noticed in most of the medical journals; among others the *Archives Générales*, (Jan. 1834,) *Journal Hebdom. des Prog.*, (t. I. No. 4,) the *Dublin Journal* for May, 1834; and in a subsequent number of this last journal, Dr. Percival Hunt published an account of a case in which he detected the cephalic bellows-sound, and alluded in a particular manner to Dr. Fisher's discovery. It is mentioned by Raciborski in his "*Nouveau Manuel complet d'Auscultation*, &c., (of which a translation has been published in London,) and is also referred to in the review of that work in the British and Foreign Medical Review. (Vol. I. p. 485.)

The discovery of Dr. Fisher has thus had the most extensive publicity; and it seems not a little extraordinary that this same auscultic phenomenon should be now announced by another as a new discovery. Yet such is the fact. Dr. James Richard Smyth, in a communication dated July 31, 1837, and published in the *London Medical Gazette* for 19th of August, 1837, relates three cases of chronic affections of the brain, in which he states that he has observed a "new auscultic phenomenon," which he terms "cerebral murmur." This and the cephalic bellows-sound of Dr. Fisher, described *four years ago*, are identical; and although the claim to originality must be awarded to the latter, the observations of Dr. Smyth are interesting, as confirmatory of the discovery, and as extending our limited knowledge of this interesting auscultic phenomenon. We shall therefore quote the description of it, as given by Dr. Smyth.

"On applying the ear to any of these situations, and also over the parietal bones, a brief, rather soft, rushing sound, synchronous with the pulse, is distinctly audible. Over the anterior fontanel and parietal bones it is heard the loudest, and it gradually

becomes fainter as the examination recedes over the sagittal suture, posterior fontanel, and occipital bone. To be somewhat more particular in the earliest description of this new auscultic phenomenon, it is an abrupt, brief, rushing, arrested sound, in tone something between a *bruit de soufflet* and a *bruit de rape*; not soft enough for the former, nor hard enough for the latter. In its character of intensity it varies of course with the energy of the action of the heart and pulse. When the circulation is excited and vigorous, and the heart, unembarrassed by palpitation, beats steadily and strongly, the sound is most clearly audible."

Dr. Fisher writes us that since the publication of his paper, he has met with many cases of disease of the brain and its envelopes in which this sound was a prominent symptom. We hope in our next number to present an account of these cases, with the inferences which flow from them.

Animal Electricity.—We have inserted in our original department an interesting case communicated by Prof. Mussey, of unusual development of electricity in the human system. Since the sheet containing that article was sent to press, we have received the January number of the *American Journal of Science and Arts*, in which we find an account of the same case by Dr. HOSFORD, the physician of the patient. As this latter is much more complete in its details we transfer it to our pages.

"A lady of great respectability, during the evening of the 25th of January, 1837, the time when the aurora occurred, became suddenly and unconsciously charged with electricity, and she gave the first exhibition of this power in passing her hand over the face of her brother, when, to the astonishment of both, vivid electrical sparks passed to it from the end of each finger.

"The fact was immediately mentioned, but the company were so sceptical that each in succession required for conviction, both to see and feel the spark. On entering the room soon afterward, the combined testimony of the company was insufficient to convince me of the fact until a spark, three-fourths of an inch long, passed from the lady's knuckle to my nose, causing an involuntary recoil. This power continued with augmented force from the 25th of January to the last of February, when it began to decline, and became extinct by the middle of May.

"The quantity of electricity manifested during some days was much more than on others, and different hours were often marked by a like variableness; but it is believed, that under favourable circumstances, from the 25th of January to the first of the following April, there was no time when the lady was incapable of yielding electrical sparks.

"The most prominent circumstances which appeared to add to her electrical power, were an atmosphere of about 80° Fah., moderate exercise, tranquillity of mind, and social enjoyment; these, severally or combined, added to her productive power, while the reverse diminished it precisely in the same ratio. Of these, a high temperature evidently had the greatest effect, while the excitement diminished as the mercury sunk, and disappeared before it reached zero. The lady thinks fear alone would produce the same effect by its check on the vital action.

"We had no evidence that the barometrical condition of the atmosphere exerted any influence, and the result was precisely the same whether it were humid or arid.

"It is not strange that the lady suffered a severe mental perturbation from the visitation of a power so unexpected and undesired, in addition to the vexation arising from her involuntarily giving sparks to every conducting body that came within the sphere of her electrical influence; for whatever of the iron stove or its appurtenances, or the metallic utensils of her work box, such as needles, scissors, knife, pencil, &c. &c., she had occasion to lay her hands upon, first received a spark, producing a consequent twinge at the point of contact.

"The imperfection of her insulator is to be regretted, as it was only the common Turkey carpet of her parlour, and it could sustain an electrical intensity only equal to giving sparks one and a half inch long; these were, however, amply sufficient to satisfy the most sceptical observer, of the existence in or about her system, of an active power that furnished an uninterrupted flow of the electrical

fluid, of the amount of which, perhaps, the reader may obtain a very definite idea by reflecting upon the following experiments. When her finger was brought within one-sixteenth of an inch of a metallic body, a spark that was heard, seen, and felt, passed every second. When she was seated with her feet on the stove-hearth (of iron) engaged with her books, with no motion but that of breathing and the turning of leaves, then three or more sparks per minute would pass to the stove, notwithstanding the insulation of her shoes and silk hosiery. Indeed, her easy chair was no protection from these inconveniences, for this subtle agent would often find its way through the stuffing and covering of its arms to its steel frame work. In a few moments she could charge other persons insulated like herself, thus enabling the first individual to pass it on to a second, and the second to a third.

"When most favourably circumstanced, four sparks per minute, of one inch and a half, would pass from the end of her finger to a brass ball on the stove; these were quite brilliant, distinctly seen and heard in any part of a large room, and sharply felt when they passed to another person. In order further to test the strength of this measure, it was passed to the balls by four persons forming a line; this, however, evidently diminished its intensity, yet the spark was bright.

"The foregoing experiments, and others of a similar kind, were indefinitely repeated, we safely say hundreds of times, and to those who witnessed the exhibitions they were perfectly satisfactory, as much so as if they had been produced by an electrical machine and the electricity accumulated in a battery.

"The lady had no internal evidence of this faculty, a faculty *sui generis*; it was manifest to her only in the phenomena of its leaving her by sparks, and its dissipation was imperceptible, while walking her room or seated in a common chair, even after the intensity had previously arrived at the point, of affording one and a half inch sparks.

"Neither the lady's hair or silk, so far as was noticed, was ever in a state of divergence; but without doubt this was owing to her dress being thick and heavy, and to her hair having been laid smooth at her toilet and firmly fixed before she appeared upon her insulator.

"As this case advanced, and supposing the electricity to have resulted from the friction of her silk, I directed (after a few days) an entire change of my patient's apparel, believing that the substitution of one of cotton, flannel, &c. would relieve her from her electrical inconveniences, and at the same time a sister, then staying with her, by my request, assumed her dress or a precisely similar one; but in both instances the experiment was an entire failure, for it neither abated the intensity of the electrical excitement in the former instance, or produced it in the latter.

"My next conjecture was, that the electricity resulted from the friction of her flannels on the surface, but this suggestion was soon destroyed when at my next visit I found my patient, although in a free perspiration, still highly charged with the electrical excitement. And now if it is difficult to believe that this is a product of the animal system, it is hoped that the sceptics will tell us from whence it came.

"In addition to the ordinary appurtenances of a parlour, it may be proper to add, that the lady's apartment contained a beautiful cabinet of shells, minerals, and foreign curiosities.

"This lady is the wife of a very respectable gentleman of this place; she is aged about thirty, of a delicate constitution, nervous temperament, sedentary habits, usually engaged with her books or needle-work, and generally enjoying a fine flow of spirits.

"She has, however, never been in sound health, but has seldom been confined to her bed by sickness even for a day.

"During the past two years she has suffered several attacks of acute rheumatism, of only a few days' continuance, but during the autumn, and the part of winter preceding her electrical developement, she suffered much from unseated neuralgia in the various parts of her system, and was particularly affected in the *cutis vera*, in isolated patches; the sensation produced being precisely like that caused by the application of water heated to the point a little short of producing vesication; in no instance, however, did it produce an apparent hyperæmia, but about the last of December a retrocession took place of this peculiar irritation, to

the mucous membranes of the fauces, œsophagus, and stomach, there producing a very apparent hyperæmia, and attended, during the exacerbations, with burning sensations that were torturing indeed; and it was for the relief of these symptoms that medical means were used, but it was found no easy matter to overcome this train of morbid action.

"It was nearly immaterial what medicines were used; no permanent relief was obtained, and no advantage resulted from the use of the alkalies, or their varied combinations. In a few instances a dose of the acetate of morphine was given to secure a night's rest, but she seldom made use of an anodyne.

"The effervescent soda draught being very acceptable was freely given—from which, in addition to a rigid system of dietetics, the influence of the opening spring, and the vis medicatrix naturæ, relief came of her electrical vexations, of most of her neuralgia, and other corporeal infirmities, and to this time, a much better state of health has been enjoyed than for many years."

The developement of electricity in the human system to the degree in which it occurred in the above case is certainly rare, though perhaps not quite unprecedented, as seems supposed, and in a less extent is far from rare. The Editor of this Journal has often seen, in dry, frosty weather, a spark of nearly half an inch pass from a bar of iron held in his hand, to a stove, and has been sensible of a smart shock on his hands being placed near the latter body. Some notice of these observations was communicated to the American Philosophical Society, four or five years since.

Professor Saussure and M. Jalabert, when travelling over one of the high Alps, were caught amongst thunder clouds; and, to their utter astonishment, found their bodies so full of electrical fire, that spontaneous flashes darted from their fingers with a crackling noise, and with the same kind of sensation as when strongly electrified by art. (See *Mém. de l'Acad. des Sc.*)

P. BRYDONE, Esq., mentions a Swiss lady whose body became electric, emitting sparks with a disagreeable sensation, and an extreme degree of nervous sensibility; but he does not give the details of the case. (*A Tour through Sicily and Malta.*) This same gentleman charged the body of a young lady with electricity, by causing her to stand on a cake of bees-wax, and to comb her sister's hair. Soon after she began to comb, the young lady on the wax was greatly astonished to find her whole body electrified; darting out sparks against every object that approached. He collected from the hair sufficient electricity in a Leyden jar, to give smart shocks to all the company. (*Philosophical Transactions*, Vol. LXIII. p. 163. London: 1773.)

Every one has observed in frosty weather, on taking off woollen or silk garments in the dark, a profusion of sparks and heard a crackling sound.

We will only further remark, that from observing this fact, that we have induced many of our rheumatic patients to wear silk inner garments, and that they have derived much benefit from the practice. The subject seems worthy of more particular attention, and we hope the hints we have thrown out may induce some one to prosecute the inquiry.

Observations on the operation of Lithotomy; illustrated by cases from the practice of Professor B. W. DUDLEY.—This is the title of an interesting paper, by Dr. JAMES M. BUSH, in a recent number of the *Transylvania Journal of Medicine*. In a former number of this Journal (May, 1837. p. 163), we noticed the extraordinary success of Professor Dudley, in the operation of Lithotomy, and expressed regret that the operator, in the account he had published of his operations, had not minutely detailed the steps of his operative method. The principal object of Dr. Bush appears to furnish some of those details.

Dr. Bush ascribes the brilliant triumph of Prof. Dudley to the thorough preparation to which he subjects his patient:—

"Whether the deranged state of the stomach, in the patients, who come to Lexington for surgical operations," says Dr. D., "be the result of *irritation* or

any other morbid action, (we have not seen a case of inflammation of the organ,) Professor D. has secured his unparalleled success chiefly by the liberal use of emetic medicines. To see the paramount importance he attaches to a perfect preparation of the general system, of all his patients, who are to submit to the knife, is to witness his seemingly tedious course, under such circumstances. While we have known a patient arrive on one day, with cataract, or a tumour, or hydrocele, or stone in the bladder, or any disease small or great, and put upon the table the next day for operation; we have seen another remain several months, undergoing treatment all that time, to change morbid actions of the digestive apparatus to healthy."

Professor Dudley "condemns most earnestly the use of the lancet, as a preparatory mean for the performance of operations; a practice that is reprobated now, we believe, universally, by the most intelligent surgeons of every country."

Professor Dudley does not consider ulceration of the bladder as forbidding the operation, provided, by proper treatment,

"The digestive organs are restored to their natural actions, the agonizing paroxysms of pain retire, the discharges of blood and muco-purulent matter subside, and clear inoffensive urine appears in more copious and natural discharges."

Under such circumstances he has successfully operated.

The following is the course of treatment pursued by Prof. D., as detailed by his friend:—

"When a patient applies to Professor D. with the ordinary symptoms of stone; to ascertain its existence the first step of course is to explore the bladder with a metallic sound. This simple but indispensable operation, however, he never performs, in any case, for several hours after the arrival of the patient; and not even then, if there be pain in the organ or the slightest fever. For it is considered highly detrimental to the sufferer, to disturb the constitution while thus deranged, even with an instrument usually so harmless. Should the general condition of the patient's body not otherwise forbid, the day after his arrival, he is sounded, having taken a general warm-bath the evening previous. But if he be suffering with paroxysms of the stone, and his blood-vessels exhibiting febrile action, with a deranged state of the alimentary tube, more energetic treatment is required before the instrument is passed into the bladder. Nauseating potions of ipecacuanha or tartar are exhibited, and should these fail to reduce the pulse and restore cutaneous action, or a proper condition of the bowels, aided by the bath, an emetic, or cathartic, or both are then superadded, with light and abstemious living. By these means two objects are effected. The first, is a prevention of any irritating results from the examination of the bladder; the other is that so much is gained in the preparatory management of the general system. Until he is completely satisfied that all the organs are in the healthy performance of their various functions, he will not operate. When, however, it is believed that the patient is ready, having been once or more times sounded, he is placed on the table and tied; immediately the staff, being oiled, is introduced into the bladder, and left resting upon the stone; when the assistant grasps it firmly, to maintain it in the bladder, at the same time holding it perfectly perpendicular to the table, carefully avoiding any inclination of it to the right or left. The convexity of the instrument being distinctly felt in the mesial line of the perineum, the operator, seated in a convenient chair, with his instruments spread on his right, proceeds to the operation. While the left hand controls the scrotum and perineum, the right makes an incision, with a middle size convex-edge scalpel, beginning a little below the root of the scrotum, and terminating an inch, more or less, behind the verge of the anus, in a straight line, through a point midway between the verge of the anus and the inner edge of the left tuber ischii. This cut divides skin, subcutaneous tissues, and perineal fascia. The second stroke of the knife is not so extensive, it divides only the posterior fibres of the accelerator urinæ, and transverse perinei muscles. Always at this stage of the operation, if the perineum be remarkably concave, presenting an inclined plane, or if the arch of the pubis be very much contracted, Professor D. introduces the left middle-finger into the rectum, and draws off the bowel to the right. The fore-finger then placed in the wound conducts the scalpel through the membranous part of the urethra into the

groove of the staff, cutting from the rectum towards the bulb. The scalpel is now laid aside and the gorget is taken up, the beautiful instrument of Mr. Cline; with its cutting edge toward the pubic arch; its beak is made to engage the groove of the staff, while the assistant resigns the latter to the surgeon's left hand, who for an instant playing the two instruments against each other, lateralizes the former, turning its cutting edge to the left, poises it for a moment, perfectly horizontal, before he plunges through the prostate into the bladder. At the same moment the gorget is passed with the right, the left hand depresses the handle of the staff; the bladder being opened, the staff is withdrawn, and the surgeon's forefinger of the left hand, directed by the gorget, is passed into the bladder, and the instrument withdrawn; the wound in the neck is dilated, forceps introduced, the calculus seized, and by steady, firm, and dilatory movements, from below upwards, and from side to side, the operation is completed by the extraction of the stone. The bladder is now cautiously explored with the scoop, and it found clear is filled with warm water from a syringe; the patient is untied, turned to his left side and thus put to bed, and is required to maintain the position for from two to four days. We have seen Professor D., in making this operation, release his patient in forty seconds from the first incision, while upon other occasions, twenty minutes were consumed before the extraction of an enormous calculus could be safely effected. He makes it a principle never to operate in any case against time, but always firm, deliberate and dexterous, he goes through what is before him with a rapidity compatible with circumstances and the safety of his patient. In the operation of lithotomy especially, his incisions are made with the greatest expertness and brilliancy; and notwithstanding we have repeatedly assisted him, we have not realized the moment when the gorget was passed, the staff withdrawn, and the finger thrust into the bladder; these three different points of the operation, always seem to be the work of an instant.

"In all his operations, he has used but two sizes of the gorget, the smaller seven-tenths, the larger eight-tenths of an inch broad in the blade. With the latter instrument, he has made an incision through which was safely extracted a calculus, three and a half inches in its long diameter, two and a half in the short, and eleven in circumference.

"It is evident that the larger size of the two is not wide enough to divide completely the prostate laterally, in the adult, or even at any age from twelve years to maturity; while with the smaller gorget, the prostate of the child from three to twelve is entirely safe from the invasion of its capsule. Certainly the opening made into the bladder, by either of the two instruments, is often very disproportionate to the size of the stone, still in one hundred and forty-three cases, in which those identical gorgets have been used, calculi varying from the size of a pea to that of the magnitude just cited above, have been extracted, with complete success and safety to the bladder, in all cases; and in but four did the subject die before he had time to enjoy the happiness of a cure. Yet in those four cases, which failed to realize the benefits of the knife, in consequence of the supervention, or aggravation, of other diseases, beyond the control of remedies, the bladder healed before death, or they passed the usual period of closing.

"Some surgeons when they have cut into the bladder, and ascertained that the stone is very disproportionate to the extent of the incision, prefer using cutting instruments a second time, with the view of extending the cut in the prostate and neck of the bladder. This practice our teacher has never adopted; but on the contrary always condemns. He contends, it is more philosophic surgery, in such cases, to extract the stone by increased tractive force, risking even a certain degree of laceration. No surgeon estimates more highly than he the advantages of a clean, smooth incision; but his extensive experience, in the operation of lithotomy, has entirely satisfied him, that the danger so generally ascribed to violence done the deeper tissues, in laceration, is not at all comparable with the beneficial consequences of such practice. Indeed the results of his mode of operating, under circumstances of a large calculus, induce him to inculcate the principle, that it is better, safer to extract by force, according to the size of the stone, than to resort a second time to the knife. In every instance, where he was required to remove a stone, which he commanded with forceps in the bladder, he has uniformly extracted by gradual dilatory and tractive force, without in a single case dragging away any of the soft parts.

"Every surgeon understands the great facility with which a calculus may be taken from the female bladder, so dilatable are the parts concerned in the operation. Unless the accretion be of unusual magnitude, Professor D. does not in the female use any dilating means previous to the moment of commencing the operation. After the patient is thoroughly prepared, and it is ascertained that the calculus is moderate in size, he proceeds directly to the operation. The same position is required as in lithotomy. With a graduated supply of forceps, he first introduces the smallest size, and gently expands the blades, in various directions, until the urethra and neck of the organ will admit the next size instrument; soon until with forceps of a proper kind, he can grasp and remove the calculus body. We have witnessed this operation, made upon a little girl six years of age, completed in forty minutes by the removal of a stone of the size of a pigeon's egg, and the pain did not seem to equal that caused by the extraction of a similar size body in lithotomy. This patient was perfectly well in five days after the operation, without loss of the powers of sphincter vesicæ. If the urethra and neck of the female bladder is so extremely relaxable, under the influence of instruments, without the aid of incision, why not expect to find the same accommodation in parts similar in the male, with the addition, to be sure, of the prostate body: a piece of anatomy, that Nature seems to have constructed with a peculiar fitness to facilitate extraction, doing away the necessity of dangerous encroachment with the knife, beyond the point of its fibrous envelope. The prostate gland appears not only to possess the property of ready and innocent laceration, splitting of its tissue, but also of extensive dilatation; and indeed it would appear that its strong capsule was also accommodating in a relaxing character.

"The operation completed, the patient is put to bed without the slightest dressings of any kind, but required to remain on the left side, until suppuration is established. He is not disturbed, even with sponge and warm water until twenty-four or thirty-six hours after the operation. From his long experience Professor D. does not fear infiltration of urine; nor has he any reasons to adopt means, such as catheter and sponge, or any material for the purpose of plugging the wound, since such a result never has followed his operations. Infiltration unquestionably does occur in many cases, and sometimes terminates in sloughing or mortification of the parts involved, and even in the death of the patient. But we do not believe that either of those undesirable effects do follow, (unless in very rare cases,) as a mere result of the operation. We should rather ascribe such a state of things, nine times in ten, to the ill condition of the general system previous to and at the time of the operation. Under such circumstances serious wounds of any description, are, most assuredly, far less manageable than in the opposite state. Then when the perineum, the urethra, prostate body and neck of the bladder have suffered a solution of continuity, when morbid actions are existing in the economy, nature too often must fail in her restorative attempts, while healthy progressive inflammation cannot develop itself sufficiently to erect barriers to the diffusion of urine; adhesive lymph is not thrown out in sufficient abundance along the incised parts, thus to restrain the limits of the urinary discharges.

"Professor D. has operated one hundred and fifty-three times; of this number, ten were females, six Africans, the remainder adults, youths and children. One hundred and twenty-two have been attended in the same apartments, and nursed by the same individual, Robert Beatty. Six were operated upon out of the city, and twenty-five at different houses in Lexington, private and public."

Case of Triplets and of Locked Heads.—"A case of this kind occurred in the practice of Dr. Joseph A. Eve, of Augusta, on the 24th of September last.

"The woman was a delicate negress, aged about 35 or 40 years. Her health had been bad during the whole period of gestation, and particularly about the time of parturition.

"The first birth was very easy and rapid; the child having passed, before the doctor's arrival. He found the woman on her knees on the floor, leaning upon a chair, and the child suspended by the cord. As soon as he had made the ligature on and cut the cord, she was put to bed, and he found upon examination, the feet of another child presenting. The labour progressed with the second child in this

presentation until the body had passed as far as the armpits, when, in consequence of the pains becoming weak, and the fear of strangulation of the cord, the ergot was administered, with the effect of increasing the force of the pains. The next phenomenon worthy of remark was the indication of undue pressure on the brain of the second child, by convulsive contractions of its legs. At the same time the woman complained of severe pain and numbness in her right leg—the same side at which the head of the upper child presented. A farther examination was then instituted to discover the cause of compression, and of the arrest; for the pelvis was unusually large, and the child rather small, though not much below the average size. On this examination the doctor discovered the head of a third child below the superior strait, whilst the head of the second, whose body was delivered, was still above the *same strait*, constituting a case of locked heads. His first attempt was to dislodge the head of the third child; but this was soon found impracticable; for it was immovably fixed below the superior strait. Not approving the plan adopted by some, of delivering the upper child by the forceps, before delivering the head of the lower, he determined to await the delivery of both together, as long as he might think it safe to the mother, and if necessary, ultimately to decapitate the lower child, press the head up from the superior strait, and thus allow the upper one to pass, or assist it with forceps, as circumstances might demand. Whilst awaiting the issue of this plan, he requested a consultation; but before the arrival of another physician, and within a little more than an hour after the discovery of the true nature of the difficulty, both heads passed. The superior child made some spasmodic movements after birth, but could not be resuscitated. Both heads were very much indented by the pressure of the other.

"Except the injury inflicted by the accident, the children were all well formed, and very little below ordinary size. Two of them were boys. The mother passed her accouchement as well as could be expected under the circumstance of her previous wretched health.

"Many cases of difficulty and perplexity in child-bearing arise from the small dimensions of the pelvis; but this was one which may be fairly attributed to too large a pelvis; for had this been of ordinary capacity, the head of the third child could not, with the good developements of both, have engaged the superior strait, with the neck of the previous child engaged in it, and the head at or near the superior plane."—*Southern Med. and Surg. Journ.*, Oct., 1837.

On the use and abuse of the Pessary.—This is the title of an article by Dr. J. T. SHARPLESS, of this city, published in Dr. Bell's *Eclectic Journal of Medicine*, for January, 1838. We do not recollect in our whole editorial career, and it has not been a short one, to have met with a more exceptionable paper; or one in relation to which we have felt so much embarrassment in expressing our sentiments. Our limits will not permit us at present, to enter into a particular examination of this paper; and were we to speak of it in the terms we conceive it merits, without sustaining our opinions by extracts, we should probably be accused of harshness; and yet entertaining the sentiments we do as to its evil tendency, we should be wanting in our duty were we to shrink from the exercise of whatever influence we may possess to counteract those effects.

Without pretending to the experience in uterine diseases claimed by the author, which, considering that he is an unmarried man and unconnected with any public institution for those complaints, would appear from his paper, to have been very remarkably extensive; and giving to this advantage on his part all due weight, we cannot help questioning the soundness of many of his doctrines. Not only are they in direct variance with our own limited observations, but with those of every practitioner of experience with whom we have conversed.

Restricted as our limits are in our present notice, Dr. Sharpless's practice in one affection appears to us to be so monstrous, that we must particularize it:—

"In the neuralgic vagina previously mentioned," he observes, "the sensibility is often so excessive, that an examination to any extent is entirely precluded, and yet

there are no evidence of inflammation or change of structure. In these cases, depletory treatment does no good, and although perfect rest and sedative applications partially benefit, the sensitiveness of the part will remain for months. *These cases I treat on the principle long practised in the same condition of the rectum and urethra, by the bougie. These I have made of gum elastic of various sizes, and the patient employs them herself, commencing with the largest that she can introduce without much suffering. This is retained until all pain ceases, and when a certain size can be used without any inconvenience, the diameter is increased. They should never be introduced unless the patient is recumbent, and great care should be taken to avoid striking the womb, as inflammation might thereby ensue. I occasionally use some sedative ointment upon them (as opium or belladonna) to assist in the relief. In all cases they should be covered by some oily or mucilaginous substance.* This treatment is almost a specific for that distressing sensibility that has been found heretofore so difficult to cure, a few days being often sufficient to remove tenderness of several months' duration."

We are loath to express this practice, or at all events that to which it inevitably in many cases would tend, in plain language; and if we could have had any doubts of this tendency, the verbal illustrations given by the Author at the College of Physicians when the paper was read, would have removed them. Those who desire an exposition of the consequences of the practice alluded to, are referred to Tissot's work on *Onanism*.

It is with unaffected pain, and solely from a strong sense of duty, that we have spoken as we have done of the above paper; but so evil do we conceive its tendencies to be, that we even hold the Editor of the Journal who has given it currency, and to a certain extent his sanction, by inserting it without comment, to be censurable.

Professor Warren's work on Tumours.—We are extremely gratified to find that this valuable work of our eminent countryman is duly appreciated abroad. It is noticed in the *Edinburgh Medical and Surgical Journal* (Oct. 1837), high critical authority, in the following complimentary terms:—

"The present work possesses substantial merit, which cannot fail to recommend it to the serious and attentive study of all those who are best acquainted with the practical difficulties of this most difficult, variable and unsettled department of surgery. The history of the different operations given by Dr. Warren is alone sufficient to stamp a high value on the work; and when the surgeon who has similar cases to treat, and tumours equally difficult to remove, learns from Dr. Warren, the difficulties against which he has to contend, and the manner in which he encountered and overcame them, he will feel that he has derived from the instructions of that author much more beneficial aid and information than any that could be conveyed by mere attention to methodical arrangement."

Much space is devoted to an analysis of the work in the October number of the *Medico-Chirurgical Review*, and the reviewer observes, "our ample extracts will evince our sense of the practical interest which attaches to the present work," and promises to return to it in the next number.

The Medical Examiner.—This is the title of a Journal devoted to Medicine, Surgery, and the collateral sciences, edited by J. B. Biddle, M. D., and M. Clymer, M. D., of this city; the first number of which was issued on the 3d of January, 1838. The plan of this publication is that of the weekly Medical Gazettes of Paris, London, and other European cities. It is to be published every alternate Wednesday, on a super-royal sheet, at three dollars a year, *in advance*. Each number to contain sixteen octavo pages of double column. If the editors shall succeed in procuring accurate reports of the clinical lectures delivered at our public institutions, and of the cases treated in them, which is a prominent part of their plan, their Journal cannot fail to be a useful one; and we wish it every success.

College of Physicians and Surgeons of the Western district of the State of New York, in Fairfield, Herkimer County.—This College opens annually on the first Tuesday in October, and the Lectures are delivered as follows:—On *Chemistry and Pharmacy*, by JAMES HADLEY, M. D. On *Anatomy and Physiology*, by JAMES M'NAUGHTON, M. D. On *the Practice of Physic and the Diseases of Women and Children*, by JOHN DE LA MATER, M. D. On *Materia Medica and Medical Jurisprudence*, by T. ROMEYN BECK, M. D. On *Surgery and Midwifery*, by REUBEN D. MUSSEY, M. D.

The expenses for attending lectures are:—For *Anatomy and Physiology*, \$12; *Chemistry and Pharmacy*, \$12; *Surgery and Midwifery*, \$12; *Practice of Physic and Diseases of Women and Children*, \$10; *Mat. Med. and Medical Jurisprudence*, \$10.

During the past session the number of medical students was 142.

At the commencement on the 31st January, 1837, the degree of M. D. was conferred on 34.

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Dartmouth College.—The number of students in this institution, as given in the annual catalogue, is 322, of which number 91 were *medical students*, and the remainder (231) *undergraduates*.

The Medical faculty consists of REUBEN D. MUSSEY, M. D., Prof. of *Anatomy, Surgery, and Obstetrics*; DANIEL OLIVER, M. D., Professor of *Physiology, Medical Jurisprudence, Materia Medica, and of Intellectual Philosophy*; JOHN DELAMATER, M. D., Prof. of *Theory and Practice of Physic*; and OLIVER P. HUBBARD, M. D., Prof. of *Chemistry, &c.*

"The annual course of Lectures begins one week after the College Commencement and continues fourteen weeks. Four Lectures daily; a part of the time five. Fees for the course, fifty dollars. Matriculating fee, two dollars. Library fee for those who take books, fifty cents. Surgical operations performed gratis before the Medical Class, during Lectures."

The requisites for graduation are the following:—

"Each candidate for the degree of M. D. must be twenty-one years of age, must possess a good moral character, an acquaintance with natural and experimental Philosophy, and a knowledge of the principles and construction of the Latin Language—must have studied medicine three full years, with some regular practitioner, must have attended two courses of public Lectures in all the branches of the profession, at a regularly organized Medical Institution, one of which courses shall have been attended at this Institution—must have passed a successful private examination before the Medical Faculty, and have read and defended in their presence an acceptable dissertation on some medical subject.

"Graduating expenses, eighteen dollars."

—
University of the State of New York.—*College of Physicians and Surgeons.*—Some charges have been made in the Faculty of this school the past year; and a new and commodious building has been erected for its accommodation.

The present Faculty are as follows:—J. AUGUSTINE SMITH, M. D., Professor of *Physiology*; ALEXANDER H. STEVENS, M. D., Professor of *Clinical Surgery*, (to Lecture at the New York Hospital); JOSEPH MATHER SMITH, M. D., Professor of the *Theory and Practice of Physic and Clinical Medicine*; EDWARD DELAFIELD, M. D., Professor of *Obstetrics and the Diseases of Women and Children*; JOHN B. BECK, M. D., Professor of *Materia Medica and Medical Jurisprudence*; JOHN TORREY, M. D., Professor of *Chemistry and Botany*; JOHN R. RHINELANDER, M. D., Professor of *Anatomy*. (Lectures on General, Surgical and Pathological Anatomy); ALBAN G. SMITH, M. D., Professor of the *Principles and Practice of Surgery*; AMARIAH BRIGHAM, M. D., Lecturer on *Special Anatomy*.—Demonstrators: James Quackenbush, M. D.; J. B. Sweet, M. D.

"The Lectures commence on the first Monday of November of each year, and continue for four months.

"The expense of attending a complete course of Lectures by all the Professors, is 108 dollars.

"The matriculation fee, which is five dollars, entitles the student to the use of the College Library. Graduation fee, \$25.

"Attendance upon two complete courses of Lectures is necessary to entitle the student to present himself for graduation, one of which must have been attended at this College. He must also have studied medicine three years, and have attained the age of twenty-one years.

"Two opportunities in each year are afforded for graduation; one on the first Tuesday in April, and one on the last Tuesday of October.

"The examination of Candidates for the Spring graduation commences on the 1st of March, and for the Fall graduation on the 2nd Tuesday in September."

Necrology.—It is our painful duty to record the death of PHILIP SYNG PHYSICK, M. D., which took place in this city on the 15th December, 1837. This calamity, though a general one, will be more severely felt by the profession than the public. Having been for many years gradually withdrawing from practice, and for the last year or two unable to visit his patients, the public have insensibly been, to a certain extent, prepared for his loss. But as Dr. Physick has published but little, his own mind was the sole repository of his vast experience. This he freely opened to his professional friends who called to consult him; and, in this respect, his loss is irreparable; and not less so on another account. Dr. Physick was remarkable for his strict attention to professional etiquette, and his high and honourable conduct in his intercourse with his brethren. As the admitted head of the profession, his example exercised a moral influence of the highest value, which will now, it is to be feared, cease.

Dr. Physick was so well known, his reputation so high, that it would not be allowable for us to indulge in common place eulogy. We must wait until the materials for a complete biography are collected, to present our readers with a just sketch of his character.

Cæsarean Section.—Prof. GIBSON has successfully performed this operation a second time on the same patient. An account of the first operation was given in this Journal for August, 1835, page 343, and for November of the same year, page 264. We are promised by Dr. Fox, who was the medical adviser of the patient in her recent pregnancy, an account of this second operation. Upwards of seven weeks have now elapsed since her delivery, and the mother and child re both well.

Statistics of Amputations.—Dr. G. W. NORRIS is collecting the statistics of amputations at the Pennsylvania Hospital. He has promised us the results of his researches for our next number.

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